Vol. 29 JANUARY 1955 No. 1

THE PSYCHIATRIC QUARTERLY

PUBLISHED BY AUTHORITY OF THE
NEW YORK STATE DEPARTMENT OF MENTAL HYGIENE

*Dr. Whitehead has been serving as editor of THE PSYCHIATRIC QUARTERLY since Dr. Bigelow went on leave of absence from this position during his service as Commissioner of Mental Hygiene.

The Psychiatric Quarterly, formerly the State Hospital Quarterly, is the official organ of the New York State Department of Mental Hygiene.

Volumes begin with the January number. Individual subscription rate, $6.00 a year in U. S. and its possessions; $6.50 elsewhere.

Editorial communications, books for review and exchange should be addressed to the editor, Utica State Hospital, Utica 2, N. Y.

Business communications, remittances and subscriptions should be addressed to the State Hospitals Press, Utica 2, N. Y.

Entered as second-class matter April 17, 1917, at the postoffice at Utica, N. Y., under the Act of March 3, 1897.

MANUSCRIPTS

Contributions from any reliable source will be considered for publication. Manuscripts should be addressed to The Editor, PSYCHIATRIC QUARTERLY, Utica State Hospital, Utica 2, N. Y.

Manuscripts should be submitted in original (not carbon) copy, typewritten cleanly, double-spaced, with wide margins, typed on one side of the paper only. Paper should be light weight, bond finish, and opaque; onion skin should not be used. The author should keep a copy for convenience in editorial correspondence.

Short summaries to conclude all articles are requested. Contributors are asked to consult current issues of THE QUARTERLY for style of reference lists and bibliographies and to submit such lists in the form used by this journal.

A short, autobiographical note is requested from each contributor.

THE QUARTERLY makes a moderate allowance, without charge to the author, for illustrations and tabular matter. Authors may be asked to meet costs of such material in excess of this allowance. Authors may also be asked to meet costs of type-setting for any extensive changes made by them after an accepted paper is in proof. THE QUARTERLY supplies 25 free reprints for each article printed, with a varying additional allowance for papers with co-authors; further reprints may be ordered at a price schedule which is set to cover costs. Reprinting elsewhere for book publication or other purposes may be arranged by agreement with the editor.

Articles accepted by THE QUARTERLY are for first and exclusive publication unless otherwise agreed by specific arrangement with the editor. Co-publication or re-publication must be arranged with the editor before publication in THE QUARTERLY.

A STUDY OF GIRL SEX VICTIMS*

BY JOSEPH WEISS, M. D., ESTELLE ROGERS, M. D., MIRIAM R. DARWIN, AND CHARLES E. DUTTON, Ph.D.

INTRODUCTION

Psychological investigations into the problems of sex crimes involving children generally are focused on the personalities of the adult offenders. Very little research has been concerned with the personalities of the girl victims of these crimes. Of those studies which have been concerned with the child sex victim, some have emphasized the effects of the sexual experiences upon the child,[1-4] while others have considered factors favoring her sexual participation with the offender.[5, 6-8] The present study belongs to the latter group in that it is concerned with the investigation of factors in the child's personality which may have favored the occurrence of her sexual activities. It seeks to answer two questions. Do some children participate with the adult offender in initiating or maintaining a sexual relationship with him? If so, what factors in the child's personality favor such participation?

I

This article is based on a California study of 73 girls who were victims of adult sex offenders. As the girls studied were, with few exceptions, referred to the writers by district attorneys, they were a select group, in that they were children of parents who had seen fit to bring legal charges against the offenders involved. Thus the characteristics noted in these children may not be typical of child sex victims in general.

The children in this group came predominantly from lower middle-class and working-class homes. In terms of religious affiliation they seemed to represent a random sample for this socio-economic group in their geographical area (Table 1).

The age range of the children studied was from four to 16 years (Table 2).

*This study is a part of the Sexual Deviation Research authorized in 1950 by the California Legislature and supervised by Karl M. Bowman, M. D., medical superintendent of the Langley Porter Clinic, and professor of psychiatry, University of California School of Medicine, San Francisco. The authors comprised the staff which carried out this part of the general study.

Table 1. Religious Affiliation

Catholic	27	Buddhist	1
Protestant	37	Unknown	3
Jewish	5		—
		Total	73

Each child was seen for as many interviews as could be arranged. Practically all had psychological tests (Rorschach, TAT and Draw-a-Person).* In all cases, the mothers of the victims or their mother substitutes were interviewed; many were also tested.

Table 2. Age of Victim at Time of Referral

Age	No. of children	Age	No. of children
16	5	8	8
15	3	7	5
14	7	6	11
13	7	5	3
12	2	4	2
11	6		—
10	8	Total	73
9	6		

On the basis of this study, it was concluded that the child sex victims in the group could be separated into two subgroups: those who took part in initiating and maintaining the relationship (participant victims), and those who did not do so (accidental victims).

In almost all cases this classification was made on the basis of the writers' over-all evaluation of the child's personality, but it could have been made on the basis of a single factor, that is the frequency of the child's sexual experiences (more than one sexual experience with one, or more than one, adult). Two or three exceptions were cases in which the child had only one sexual experience, but in which there was other evidence of participation, such as the child's assertion that she had enjoyed the sexual act. Most of the participant victims knew the offender for some time before the incident, and frequently he was a relative or family friend[5] (Table 3).

In many cases, the participant victims received some type of remuneration such as candy, money or movie tickets. In many cases, but with notable exceptions, the participant victims kept their sex relationships with the offenders secret from their parents.

*A report by Dr. Dutton on these psychological tests, with an interpretation of the findings, will appear in a separate paper.

Table 3. Offender's Relationship to Child

	Accidental	Participating	Undetermined
Father	3	4	2
Brother	..	2	..
Stepfather	..	7	2
Uncle	1	1	..
Foster-father	..	3	..
Step-grandfather	..	1	..
Family friend	2	5	..
Neighbor	3	13	3
Mother's boyfriend	1	1	1
Boyfriend	1	3	..
Storekeeper	..	3	..
Stranger	10	1	..
	21	44	8

In almost all cases classified as accidental victims, the offender was a stranger, the act occurred only once, the child received no remuneration for it, and she told her parents of the incident soon after it occurred. The accidental victims were on the average slightly younger than were the participant victims (Table 4). For instance, 15 accidental victims were aged 10 or younger, or roughly three out of four of the total accidental sample; whereas, only 23 participant victims, roughly a half of the total participant sample, were 10 or younger.

Table 4. Victims Classified as Accidental or Participating, and Ages

Age	Accidental	Participating	Undetermined
16	2	3	..
15	1	2	..
14	1	4	2
13	1	5	1
12	1	1	..
11	..	6	..
10	3	5	..
9	3	3	..
8	1	6	1
7	2	3	..
6	3	5	3
5	2	1	..
4	1	..	1
	21	44	8

Table 5 compares the types of offenses committed against the participating and the accidental victims. This table shows that vaginal intercourse occurred relatively more often in the participant victim group than in the accidental victim group.

Table 5. Types of Sex Offenses

	Accidental	Participating	Undetermined
Vaginal intercourse attempted and executed	2	13	4
Vaginal intercourse resulting in pregnancy	..	3	..
Fingering and fondling of genitals*	18	27	4
Anal intercourse (sodomy)	..	1**	..
Mutual masturbation and exposure	..	1	..
Fondling breasts	1	..	..
	21	44	8

*Including mouth-genital contacts.

**An additional form of sexual activity occurring in one case only.

Although the girls classified as participant victims show marked individual differences, a majority of these girls have certain personality traits in common, so that for purposes of exposition it is possible to describe a typical participant victim. The typical participant victim, as was noted by Bender and Blau,[9] is often very attractive and appealing. She establishes a superficial relationship with the psychiatrist almost immediately. She does not hesitate to enter the playroom, and, once there, she is more interested in the psychiatrist than in the playroom toys. She may behave with the male psychiatrist as if he is an exalted authority. She may be submissive or sexually seductive with him, or she may attempt to win him masochistically by humiliating herself in order to gain pity. Often she is demanding of proofs of affection from him. For instance, she may ask to take a present from the playroom.

Certain tendencies are frequently revealed in the playroom fantasies of the typical participant victim. Her fantasies may contain masochistic elements. For instance, she may enact a scene in which a girl doll is misunderstood and unfairly punished by a parent doll; or she herself may lie on the floor, pretending to be completely paralyzed by poliomyelitis, and ask to be fed. Her play reveals, too, her unresolved conflicts about looking and being looked at (scopophilia and exhibitionism). She may fantasy a situation in which a child peeks at her parents in bed, or she may slyly re-

move the trousers from one of the dolls and giggle. Another of her playroom preoccupations is with family conspiracies, and in her doll play she may have a girl doll and a father doll keep a secret from the mother doll, or she may have the daughter and the mother keep a secret from the father.

From interviews with the mothers of participant victims, one can arrive at a typical picture of the family situation in these cases. The mother is masochistic. Often she is married to a helpless, dependent man whom she has to support, or to a strict, demanding man who permits her little individual expression. Frequently she is divorced or separated from the victim's father (Table 6).

Table 6. Family Make-up at Time of Experience

	Accidental	Participating	Undetermined
Parents together	13	23	3
Stepfather in home	2	9	2
With relatives	..	..	..
Foster home	1	2	..
Divorced	3	2	1
Father in jail	1	..	..
Father deserted	..	1	..
Separated	..	5	2
Stepmother in home	1	..	..
With father	..	2	..
	21	44	8

The mother is masochistic in her attitude to her daughter. She feels harassed by her daughter and unable to handle her. If she has other children, she feels closer to them. She describes her daughter's moodiness and un-co-operative attitude, maintaining that her daughter is spoiled because she has been overindulged. She describes the sacrifices she makes for her daughter and her daughter's ingratitude. She complains that her daughter has a winning way with adults which conceals her real selfishness. It is not hard for the interviewer to detect jealousy of the daughter in the mother's comments.

The typical mother is at least as critical of herself as she is of her daughter. She vacillates between criticizing herself for strictness and criticizing herself for leniency. She feels that her strictness and her lack of understanding of her daughter have contributed to the child's difficulties; but, also, that she has spoiled her

daughter by being too lenient. If her husband is strict and punitive toward the child, she vacillates between supporting his strict attitude and protecting the child from him.

Often, the mother is in conflict, not only about strictness and leniency, but also about her attitude toward the child's developing sexuality. She feels that she should teach her daughter more than she has taught her about sex, but cannot do so because of embarrassment. At times she feels proud of her daughter's attractive appearance and winning ways, but at other times she labels her a "flirt" or a "prima donna" and fears that the child's attractiveness will lead her into sexual difficulties in adolescence.

The mother's vacillation in her attitude to her daughter may be understood in terms of her guilt over jealousy of her daughter. This jealousy leads her to deprive and belittle her daughter, whose freedom and attractiveness she feels are at her expense. Her guilt over her jealousy causes her to indulge and flatter her daughter and to humiliate and criticize herself.

In some cases conflict regarding the child's upbringing appears more prominently as a disagreement between the parents than as an intrapsychic conflict in the mother. For example, a father enjoins modesty and makes certain that he is always fully clothed in the child's presence, while the mother deplores his prudishness and encourages the child to take a more "natural" attitude toward nudity.

Conflicts within one parent or between the parents as to proper attitudes toward the child's expression of her sexual impulses are confusing to the child and sexually stimulating to her, in that they focus her attention on sex. Her parents' confusion makes it difficult for her to have a stable set of attitudes toward her own sexual impulses, and makes it difficult, therefore, to develop a stable conscience (super-ego).

In this discussion of the typical family of a participant victim, the prominence of parental disagreement about the child's sexual upbringing has been stressed. An example will indicate how such parental disagreement may favor the child's tendency to act out sexually with an adult.

The parents of a six-year-old girl disagreed about what to teach her concerning modesty. Her father encouraged her to go nude in his presence and he went nude in hers. Her mother attempted to counteract the father's influence on the child by teaching her to be

modest. In a sense the child's sexual behavior, in which she looked at a man's genitals and allowed him to look at hers, was sanctioned by her father's attitude and forbidden by her mother's, so that this behavior represented on one level the child's alliance with her father in the parental disagreement. The child was able to feel somewhat relieved of responsibility for her sexual activity because this activity seemed to be sanctioned by her father. Nevertheless, she must have known that her father's permissiveness was not meant to lead her to actual sexual activity, so that her behavior was a kind of spiteful obedience to him. Also, she may have been aware that her behavior would prove her mother right in the parental disagreement and thus, in a sense, please her mother. She realized that her father would blame himself rather than her for the sexual activity, and that her mother, too, would blame him. Thus, in her sexual behavior, the child expressed defiance toward each parent and ingratiated herself with each.

In a number of cases, parental conflicts about the child's expression of her sexuality were not the most striking determinants of the child's sexual acting out. More evident in these cases, was the sexually stimulating behavior of the parents toward the child. These parents were actually in conflict about their attitudes in that they did not consciously intend to lead their child to overt sexual behavior. In fact when the child of such parents became a sex victim the parents felt very disturbed and guilty.

The parents stimulated their children sexually in various ways. In some cases the mother warned her daughter from an early age to avoid men because of the sexual consequences, and in so doing made the child aware of the possibility of sexual relationships with adult men; the mother's warnings were at the same time prohibiting and stimulating to her child. Several mothers directly encouraged their daughters to be "sexy," as for example the mother who repeatedly had her six-year-old do a strip-tease act for company. In some cases, the child's father was very seductive with her and stimulated her physically by kissing, fondling and wrestling. A number of participant victims were stimulated sexually by having the opportunity to watch their parents having sexual intercourse.

Although these children were able to indulge in sexual activities with adults, they were not free of remorse and guilt about their sexual behavior. Quite the opposite was the case. All the partici-

pant victims had guilt about their sexual activities, guilt which, if not expressed directly, was manifest in phobias, nightmares, anxieties, etc. The children's guilt is understandable in terms of their parents' attitudes: The parents both stimulated and prohibited the children's sexual impulses.

Though sexual conflicts were extremely common among the participant victims, more basic conflicts underlay the sexual ones. Almost all of them felt deprived by their mothers and resentful toward them. Their mothers' masochistic attitudes engendered in the girls intense feelings of guilt and obligation; many felt that they should devote themselves to making their mothers happy, and that they should have no lives apart from their mothers. These girls, feeling trapped by their sense of obligation to their mothers, rebelled against it. Through sexual relationships with adult men, they expressed their defiance of their mothers and gained a feeling of independence. At the same time, they satisfied their longings for approval and attention.

II

Some of the points made in the foregoing can best be clarified and elaborated through discussion of individual cases.

Kathleen R., an eight-year-old girl, was repeatedly the passive partner in acts of cunnilinctus and masturbation with her father's best friend. The offender, Mike, was a 45-year-old unemployed house-painter. His relationship with Kathleen began shortly after he rented a room in the R. household, and lasted for about a year. Kathleen did not reveal the relationship to her parents nor did they suspect it. It came to light when Mike bragged about it in a bar. Kathleen readily acknowledged her activities with Mike, who was convicted and sent to state prison.

Kathleen was an only child. During Kathleen's delivery her mother almost died. Fearing that another pregnancy might kill her, Mrs. R. never again had sexual intercourse.

During Kathleen's infancy and childhood her father was a semi-invalid. When the baby was a few weeks old she was left in her father's care and her mother returned to her job in a laundry. From the age of three to seven, she was cared for by her invalid grandmother, as her father was then working part-time. When Kathleen was seven, her grandmother became too ill to care for her, and thereafter she was usually left unsupervised.

The relationship between Kathleen's parents was an unhappy one. After her third year they had several short separations, but came back together each time for the sake of the child. They often quarreled violently in Kathleen's presence, and each sought Kathleen as an ally against the other. Mrs. R. complained to Kathleen that her father was unfaithful and a poor provider, while Mr. R. complained to Kathleen of her mother's constant nagging.

Kathleen's mother was a large, excitable woman who pleaded with the court authorities not to let her child be taken from her. She told the writers how she had sacrificed for Kathleen, and how in spite of ill health she had supported her family because of her husband's inadequacy. Her whole life, in fact, had been devoted to the service of others. She was the oldest of 10 children, and before her marriage had sacrificed her own happiness to help her deserted mother care for the younger children. Mrs. R. felt rejected by her husband; she accused him of interest in other women, and, in Kathleen's presence, criticized him for flirting with them. She also accused him of behaving flirtatiously toward Kathleen, saying that he kissed her as if he were "making love to a grown woman." She complained that Mr. R. preferred going out with Kathleen to staying home with her.

Kathleen's father was a slight, shabbily dressed man who had an exaggerated limp. In Kathleen's presence he bragged about her talents and accomplishments. He called attention to her clothing, and mentioned how much he had paid for each garment. He seemed to feel that to prove himself a good father he had to demonstrate his sacrifices for his daughter.

Mr. R. expressed mixed feelings about Kathleen. He described her beauty and talents with enthusiasm, and told of his plans to make her a child actress, a ballet dancer or a photographer's model. He said that he was prepared to make any sacrifice for his daughter's sake. He felt, however, that Kathleen was selfish and cold and that she did not appreciate what he was doing for her.

Mr. R. compared Kathleen to his own mother, whom he remembered as a beautiful, selfish, promiscuous woman who had never loved him. When he was five, his parents were divorced. He was sent away by his mother, and had spent the remainder of his childhood in institutions. He attributed his failure in life to his mother's rejection of him.

Kathleen was an elaborately dressed little girl. She stood listlessly at her father's side while he bragged about her. She scarcely responded to him when he tickled her or called her his "little darling" or a "little flirt."

In the playroom, Kathleen was compliant and sullen. In a bored manner she played with various toys and would not start a new activity without asking permission to do so. She pointed to small scratches and bruises on her body and told how these had been inflicted by "mean" children. She spoke disparagingly of several of her friends, telling how one girl got herself dirty, how another lied and how a third "thought she was smart" and tried to act grown up. She added that her parents did not like her to associate with these children.

In doll play, Kathleen enacted situations in which a husband and wife quarreled, and in which their little girl conspired with each parent to keep secrets from the other. In one fantasy, the little girl sneaked out of the house and spent the night in the automobile. The mother knew about this, but did not tell the father, who would have punished the child. In another fantasy the husband hid from his angry wife, and the child, who knew where her father was hiding, did not tell her mother.

Certain facts brought out by Kathleen during the interviews suggested that she felt intensely guilty toward her mother. She spoke frequently of her mother's sacrifices for her, and expressed the fear that her mother might die of overwork. Whenever her mother fell asleep in a chair, Kathleen felt compelled to perform a ritual in which she touched her mother four times to assure herself that her mother was still alive.

Kathleen feared that one or both of her parents might be carried away by ghosts. These fears were such that she could not go to sleep at night unless she could hear both of her parents in the next room. She also feared that she herself might be carried away by ghosts unless both parents were in the house. This need to have both parents with her was probably related to Kathleen's guilt over her conspiracy fantasies. It was a reassurance to Kathleen to have her parents together, a reassurance that she had not separated them by conspiring with one against the other. Her fears concerning her parents, though present for three or four years, were accentuated during the year preceding the writers' inter-

views with Kathleen, that is during the period of her sexual relationship with the offender.

Mr. R. and Mike, the offender, were close friends. Mr. R. felt that Mike, like himself, was a man of great talent who had been misunderstood and abused. He nursed Mike after his alcoholic binges. He planned business ventures with him to exploit Kathleen's attractiveness; for example, they planned to become dealers in hand-painted blouses which Kathleen would model. Mr. R. frequently left Kathleen with Mike all day. He encouraged Kathleen to call the offender "Uncle Mike." He was pleased when Mike visited Kathleen in her room at night, ostensibly to tell her bedtime stories. He suspected nothing when Kathleen brought home five-dollar bills which Mike had given to her. Mr. R. felt that he, his daughter and his friend were allied against his unsympathetic wife.

Of prime importance among the factors favoring Kathleen's sexual behavior with the offender, was the relationship between Kathleen and her parents. Kathleen's father expressed frankly erotic feelings toward his daughter, and Kathleen's mother was outspokenly jealous of her. Her father's attitude was directly stimulating to her sexually, and the attitudes of both parents heightened her interest in her sexual attractiveness.

Kathleen could easily displace her interest in her father onto Mike, since her father encouraged her relationship with Mike, his close friend. She must have experienced her sexual relationship with Mike as an alliance with her father and a defiance to her mother in the conflict between her parents. This siding with her father, although gratifying, caused Kathleen conflict in that she wished to retain her mother's love. She was able to side with her father only at the expense of considerable guilt and anxiety, as is shown by her fear that her mother would die, and by her compulsive rituals which were concerned with her mother's life and death. It is likely that her guilt was augmented by a feeling of power that her parents' attitudes toward her engendered. Since each parent constantly appealed to her for support against the other, she could easily feel that the wellbeing of each of her parents depended upon her loyalty to each.

Kathleen's sexual behavior expressed not only her siding with her father in the conflict between her parents, but also asserted her independence of each of them. Both parents felt, and encouraged

Kathleen to feel, that they had made great sacrifices for her; and her father led her to believe that his future happiness depended upon her. The attitudes of her parents caused Kathleen to feel intensely obligated to each of them, and to feel that she should belong to each of them and not regard herself as a separate individual.

In itself such an intense feeling of obligation was disagreeable, but it was made especially so by the contest between Kathleen's parents for her loyalty, because she could not belong to either of them without disappointing the other. Kathleen's relationship with Mike may be considered as an attempt on her part to extricate herself from this situation. By forming a close relationship with him, Kathleen was less in need of a close relationship with her parents. Through this substitute relationship, she could express her wish to feel independent of her parents and to feel more separate from them.

In this, as in other cases, parental blindness to the child's sexual affair permitted its continuation. To protect himself from the guilt that awareness of a child's sexual activities could engender in him, the parent has to deny that these activities occur. Such a mechanism was noted by Eissler.[10] Kathleen's father could not see what was going on between Kathleen and Mike, for had he done so he would have had to acknowledge that his wife was justified in regarding his attitude toward Kathleen as harmful.

To restate part of this formulation in a more theoretical framework, it would seem that the attitudes of Kathleen's parents made it difficult for her to repress her impulses, but did permit her to handle them by a type of projection. She did not have to acknowledge her jealousy of her mother. By noticing her mother's jealousy of her, she could in effect deny her own jealousy. Likewise, by noticing her father's sexual interest in her, she did not have to consider her own sexual interest in him. Thus, though she could not repress these impulses, since her parents were constantly stimulating them, she did not have to feel responsible for the impulses. Her parents were now responsible. But her parents were in conflict. Consequently, she experienced her sexual conflicts, in part, as a conflict between the demands made upon her by her parents, so that her sexual problems became fused with the more general problem of trying to get along with her parents, who were fighting for her allegiance.

III

Shirley D. was a 10-year-old girl who was sexually molested three times in the course of a year. The offender was a 60-year-old neighbor. Each incident occurred while Shirley was visiting the neighbor in his home. According to Shirley the offender exposed himself to her and forced her to handle his genitals; he threatened to "take me away somewhere" if she told her parents. The offender claimed that Shirley invited his actions by putting her arm around him and touching his genitals through his clothing.

Shirley told a girlfriend about the first two incidents, but did not tell her parents because she felt ashamed and because she feared that her mother might not believe her. She had her friend accompany her on her third visit to the neighbor's house, so that she would have a witness if anything happened. The third offense occurred upstairs, where Shirley and the offender went, ostensibly to find a bag of walnuts. Shirley told her friend what had happened, and the friend told Shirley's mother. Shirley confirmed her friend's story when questioned by her mother and appeared to feel very ashamed. Her mother reported that Shirley slept restlessly and talked in her sleep for two or three nights following the confession.

Shirley, unlike Kathleen, was friendly and talkative in the playroom. During the first interview she complained of her untidy hair, and told how her baby sister "ties me down." She had the manner of a harassed mother. She told of her anger at her five-year-old brother, who scattered her toys around the floor and put the blame on her. She described "scary games" which she enjoyed playing with her father, and mentioned a "grumpy" school janitor, whom she said she liked because he sometimes chased her.

In the second interview, she was less self-conscious and more vehement and direct in her expression of feeling. She made up a game in which she threw a ball at a formation of toy soldiers, explaining that a king was rewarding her by letting her kill all his soldiers. In a self-critical tone she said that she was enjoying herself because she was being mean, adding, "I hate people but the trouble is that I'm people myself." She declared that she especially hated her mother for preferring her brother, but that her father liked her even if her mother did not.

The mother described Shirley as an active tomboy who was much harder to control than was her brother. She said that Shirley frequently disobeyed her. "When I call Shirley she has to play 10

minutes more before she comes." The mother always has to check on whether Shirley has performed her household duties since Shirly has lied to her about this. She complained that Shirley liked to show off and did things "for effect."

Shirley's mother, a quiet, shy woman of 35, appeared uncomfortable during the interviews, and was self-critical in discussing her relationship with her daughter. She spoke mainly of her uncertainty regarding the correct attitude for her to take toward Shirley. She felt that she was being either too lenient or too strict with her. On the one hand she did not wish to spoil Shirley by being too lenient, but on the other hand she feared that if she were too strict Shirley would feel rejected and unloved. Further, she did not know what attitude to take toward Shirley's "showing off." Although aware that Shirley's showing off irritated her, she attempted to check her impulse to criticize Shirley for it. She also had a conflict regarding the proper attitude to take toward Shirley's sexual curiosity. She felt that she should talk frankly to Shirley about sex but was too embarrassed to do so.

Mrs. D. felt that these problems were related to her fear of treating Shirley as her own mother had treated her. Mrs. D. recalled her mother as a prudish, strict, unloving woman. Her mother had often teased her when she looked in the mirror—saying, "There's Lady Jane admiring herself again."

Mrs. D. experienced similar conflicts regarding her husband's attitude toward Shirley. Mr. D. was prudish and strict; he punished the children by spanking them or by withdrawing privileges whenever they disobeyed him. Mrs. D. sometimes felt that he was too severe, and intervened on their behalf, meantime criticizing herself for interfering with his discipline. She felt that her husband, who had no conflicts regarding his attitude toward the children, handled them better than she. She observed that Shirley, when alone with her father, behaved better than when both parents were present.

Both Mr. and Mrs. D. were prudish, and in 10 years of marriage had never seen each other nude. Mr. D. felt that the children should be taught modesty and decorum. Mrs. D. advocated teaching them "wholesome attitudes toward sex." She felt guilty about her own prudishness and her husband's. She felt that Shirley would have been less shocked by the sight of the offender's genitals had she permitted Shirley to see her father nude. Mrs. D. recalled

how shocked she had been as a child of eight, when on one occasion a man exposed his genitals to her. She laid the blame for her reaction on her mother, who had failed to discuss sex with her.*

On the basis of these facts, it is possible to formulate the factors favoring Shirley's sexual behavior as follows:

Shirley's mother was in conflict as to how much obedience to expect from Shirley. She was concerned also with how much she should permit Shirley to show off and with the extent to which she should permit Shirley to satisfy her sexual curiosity. She was in conflict regarding her husband's strict attitude toward Shirley. At times she sided with Shirley in her rebellion against Mr. D. and at other times she sided with the father in his strictness toward Shirley.

Shirley felt deprived and mistreated by her mother, who, she believed, favored her young brother. She felt rebellious toward her mother, and expressed this rebelliousness in several ways, of which her sexual behavior was one. In looking at an adult man's genitals she was satisfying the very impulse—sexual curiosity—which her mother both condemned and condoned. Further, her rebellion took place in an area in which the mother, because of her own problems, was unable to deal with her. It was as though Shirley realized she would not be held accountable for her behavior, which, in fact, she was not. Her mother blamed herself and her husband for Shirley's difficulties. (See Colm,[11] and Johnson and Szurek.[12])

Shirley may have felt frightened by the offender during her sexual activities with him and may have enjoyed this in the same way she enjoyed being frightened by her father or by "the grumpy janitor." Her experience with the offender was thus a gratifying one. Shirley could express her anger and defiance toward her mother in obtaining this forbidden gratification, since she was doing something for which she knew her mother would take the blame.

IV

Dorothy B., a 10-year-old girl, had a sexual relationship of four years in duration with her stepfather. The relationship began when Dorothy, then aged five, returned to her mother's home after living for two years with her grandmother and her aunt in another city.

*Colm reports a case in which the mother of a probable sex victim attempted to diminish her daughter's sexual preoccupations by letting her look at her father nude (Ref. 11).

The stepfather at first had Dorothy handle his genitals, and when she was about seven, he began having vaginal intercourse with her. He was rough and abusive, threatening to beat her if she told her mother of his actions. Dorothy, nevertheless, attempted several times to tell her mother what was going on, but her mother was reluctant to believe her because she felt Dorothy was merely making a bid for attention. When Mrs. B. finally realized that Dorothy's accusations were justified, she confronted her husband with them. He confessed remorsefully and was sent to prison. Upon his release six months later, he resumed his sexual practices with Dorothy, then aged nine. Dorothy did not tell her mother of this because she did not want to be responsible again for separating her mother and stepfather. Mrs. B. felt uncertain whether she was right in letting her husband return; she decided to leave to Dorothy the final decision as to whether he might stay.

Dorothy was the second of four children; she had two brothers, aged 11 and eight, and a half-brother aged nine months. Her birth and early development were uneventful. According to her mother she was a cheerful, friendly child. When she was two-and-a-half, her mother already considered her "a little flirt." She would wander from home and be found by her mother making friends with strange men in a public park. From two-and-a-half to five, Dorothy stayed with her maternal grandmother and her aunt in another city, while her brothers remained at home. This separation was occasioned by her mother's illness, and by difficulties between her mother and father, which ended in the latter's desertion of the family. At three Dorothy was given a choice between returning home and remaining with her grandmother and aunt, and she chose the latter alternative. Evidently Dorothy was responding to her mother's rejection by rejecting her mother in return. By her indifference she denied that her mother's rejection hurt her.

At five, following the death of her aunt, Dorothy moved back with her mother and her mother's second husband, the offender. Her mother found her a changed child; she was now ungracious and demanding. "If you gave her shoes, she wanted socks." At times she was affectionate toward her mother and desirous of love, but more often she was sullen and spiteful. It appeared to Mrs. B. that when she and her husband behaved affectionately to each other, Dorothy felt jealous and left out.

According to Mrs. B., Dorothy at the age of five accused an adult male cousin of molesting her sexually, and at the age of seven accused a school janitor of doing so. The janitor defended himself by pointing out that Dorothy had asked him to let her play with his genitals.

With the male psychiatrist, Dorothy was friendly and flirtatious. She talked freely and was mainly preoccupied with the feelings of fear and disgust which her stepfather inspired. Following sexual contacts with him she avoided her friends, fearing that they might smell semen on her. At these times she avoided her stepfather also and could not look him in the eye. She recalled that following her stepfather's return from prison she had nightmares which frequently concerned snakes or other loathsome animals. She dreamed that if she touched these animals she would kill them or be killed herself. She reported the following detailed dream:

"I was going to a social with Lillian [a girlfriend]. Presents were being given away and I got first choice. I picked the best one. The old man who gave them out didn't want me to have the best one. On the way home I passed a haunted house. Policemen and lots of other people were inside. The man who had passed out the presents was lying dead on the floor; he had no eyes. I looked away from him and left right away. Then he came back to life and came out the door. He touched his finger to the holes where his eyes had been and started to touch me on the shoulder with the gooey stuff. If he had I would have died. Then he fell down, laughed and died in peace."

Dorothy volunteered that the old man in the dream reminded her of her stepfather.

Dorothy remarked that she feared growing up and getting married because neither of her mother's husbands had been any good. Her mother had suffered a great deal and this was to be expected, she said, because good people always suffer.

On one visit Dorothy appeared tense and unhappy. She said that both of her parents seemed sick of her; her stepfather had accused her of being the cause of all his trouble, and her mother had said there was too much hatred in the family and if things did not improve one of the children would have to be sent away. Dorothy assumed that she would be the child to go.

Mrs. B. was, in fact, very critical of Dorothy, who she felt was cold, distant and demanding, and whom she considered her most

difficult child. She maintained that Dorothy was vain and too concerned with getting the attention of others, especially of men. She resented Dorothy as the cause of the trouble between herself and her husband.

Mrs. B., however, reproached herself for these attitudes. She felt responsible for Dorothy's difficulties, believing that her resentment of Dorothy and her "martyr" attitude affected the child adversely. She recalled her resentment of her own mother's coldness and martyr-like attitude, and did not want to treat Dorothy as she had been treated. Further, she reproached herself for her inability to discuss sex with Dorothy; she felt that frank sexual discussions might somehow have helped Dorothy avoid the sexual relationship with her stepfather.

When first confronted with them, Mrs. B. had dismissed Dorothy's accusations against her stepfather as a bid for attention in keeping with her flirtatious disposition. After becoming convinced that Dorothy had actually had a sexual relationship with Mr. B., the mother was angry at her and jealous of her. She also felt guilty toward Dorothy, saying, "It was my happiness or Dorothy's, and in letting him remain I was being selfish and not considering my daughter." Further, she blamed herself for refusing to have sexual intercourse with her husband; this refusal she believed tempted him to molest Dorothy.

A detailed discussion of the offender is not relevant. It is sufficient to state that he was a very masochistic man, always ready to feel mistreated. Although he felt intensely guilty toward both Mrs. B. and Dorothy after his sexual activities with the child were discovered, he also felt that they were to blame for these activities: Mrs. B. for refusing him intercourse, and Dorothy for her seductiveness. "She put ideas in my head by climbing on my lap and rubbing against me."

One may ask why specific factors in Dorothy's development have to be considered in order to account for her sexual activities. Would not any child intimidated, as Dorothy was, by her stepfather, submit to him? Despite the relevance of this viewpoint, Dorothy's seductiveness with the janitor shows that she did have a tendency to participate sexually with an adult man, regardless of the factor of intimidation.

It is not necessary again to point out in detail how the child's feeling of rejection by her mother, her hostility to her mother, and

her jealousy of her mother were permitted expression in her sexual activities. As in the other cases the mother's jealousy of the child and her conflicting attitudes toward the child were factors that hampered the development of a stable conscience in the child.

Dorothy's situation resembled that of three or four other girls in the research group who had sexual relationships with their stepfathers. In these cases, as in Dorothy's, the mother was unable to intervene and put a stop to the child's activities. Mrs. B. could not "hear" Dorothy's confession of sexual involvement with Mr. B., for she knew that facing the fact would mean that she would have to give up her husband, and would also have to feel more guilty toward Dorothy.

Clearly demonstrated in Dorothy's case, is the intense anxiety and guilt aroused in her by the sexual experience. Dorothy's dream reveals her disgust and shame over it. Her comments to the psychiatrist show how guilty she felt toward her mother and how intensely she feared that her mother would reject her. She could not tell her mother of the second series of sexual episodes because she did not want to separate her mother and her stepfather again. She feared, too, that if her mother were faced with the choice of rejecting either her or her husband, her mother would reject her.

V

Elizabeth K. was an attractive and very flirtatious eight-year-old girl who had a history of several sexual contacts with the 51-year-old stepfather of a playmate. According to the history, Mary, the playmate, offered Elizabeth a candy bar "to come to my house and see my father's 'thing.'" Elizabeth accepted the invitation. She permitted the man to fondle her genitals and she inspected and handled his genitals. She could not tell her parents, she said, because the offender threatened to hurt her if she did. The affair came to light when the offender's son teased Elizabeth about letting men fondle her. Later Elizabeth told her mother that she had enjoyed the sex play. This caused Mrs. K. much concern, as she feared that Elizabeth might continue to engage in such activities, and prompted Mrs. K. to seek the writers' advice regarding the proper way of dealing with Elizabeth's sexual problems.

Elizabeth was the fifth of 11 children. Her mother said that there was nothing remarkable about Elizabeth's personality or development except that she was the prettiest and most attractive of

the children, and that she seemed to crave the attention and approval of adults more than the other children did. For example, she occasionally pretended that she was sick so that her mother would show her special attention; often she got up at night on the pretext of getting a drink of water to visit with her mother and father downstairs. According to Mrs. K., Elizabeth seemed to try hard to make an impression on casual adult acquaintances, and such acquaintances usually paid more attention to Elizabeth than to the other children. Mrs. K. disapproved of this, as she feared the attention might "go to Elizabeth's head."

Mrs. K. volunteered that she and her husband disagreed about the raising of the children. Mr. K. loved the children but "emphasizes absolute obedience and doesn't regard the children as individuals." Mrs. K. believed in being completely frank with the children about sex; she answered all their questions. Her husband felt that she was too preoccupied with their sexual education.

Elizabeth was seen for three playroom interviews; first by a male psychiatrist and on two subsequent occasions by a female psychiatrist. Since Elizabeth's behavior during these interviews revealed very clearly certain of her characteristics—her flirtatiousness and her tendency to manipulate people by playing them against one another—these interviews will be presented in some detail. The interview material also makes evident Elizabeth's feeling of deprivation and her jealousy of her siblings.

At the beginning of the first interview she was reluctant to leave her mother to accompany the doctor to the playroom. For the first 20 minutes of the hour she stood in the middle of the room and appeared distant and sullen. When asked if she wanted to sit down she replied haughtily, "No thank you."

When the doctor commented, "You have a large family," she replied, "You wouldn't think so the way they treat me." She explained that all the other children picked on her but declared, "I don't care." She then began to rearrange the doll house furniture. When asked about sleeping arrangements in her own house she replied that she slept with her sister, who wet the bed, "probably on purpose."

Elizabeth became flirtatious in her manner, brushing against the doctor's leg as she walked past him, and putting her head very close to his when she talked.

The doctor asked if she had any dreams, and she replied "Yes, but I'm not going to tell you." She added, "Mr. T. [the offender] wasn't in them." The doctor said, "Why do you tell me that Mr. T. was not in them?" She answered, "That's what you wanted to find out, isn't it? I know you doctors." She added in a coquettish voice, "Doctors aren't too nice; they give people shots and cut them open and take out their appendixes."

She continued teasingly to tell the doctor that she was having thoughts but she wouldn't tell him what they were. She said, blushing, "I'm going to tell my mother I don't want to come back." Noticing the bathroom door, she commented, "I wish you were a woman so that I could go to the bathroom." The doctor offered to leave the room. She then asked, "What if I wanted you to stay while I was going to the bathroom? Would you?" The doctor answered no, whereupon she said, "I was just kidding; I don't have to go to the bathroom; I just wanted to see if you were nasty."

Although she was clearly enjoying herself, she frequently asked when the time would be up, saying that she was eager to leave and join her mother. At the end of the hour she and the doctor went to her mother. Elizabeth kissed her mother. Blushing, she looked at the doctor and in a tone of mock petulance said, "I don't want to come back any more with that man." After this she hugged her mother and they left.

Following this interview Mrs. K. telephoned the staff social worker, whom she had seen, to ask whether Elizabeth had to continue seeing the male doctor. According to Mrs. K., the interview with him had upset Elizabeth. She had told her mother that he had asked whether she had seen her parents having intercourse (which in fact he had not). Elizabeth had then led Mrs. K. into a discussion of her mother's marital intercourse. Because of Elizabeth's feelings, arrangements were made for her to see the woman psychiatrist for her remaining interviews.

At the beginning of the second hour, Elizabeth brought to the social worker who had interviewed her mother a note which read, "Dear Mrs. D.: How are you? Thank you for letting me play in the playhouse. I had a wonderful time."

In her first interview with the woman therapist she seemed slightly bored and sighed often. She occasionally looked at the doctor with a penetrating, questioning stare. She asked teasingly if she could take the blackboard home.

She said that once while attending a parochial school she had fallen off a seesaw in the yard. The girls had teased her for this so that she had refused to return to the school. Asked about her mother's attitude she replied, "She felt the same way I felt because she knew those girls had no right to be mad at me." As the end of the hour approached, she sighed frequently and said she was lonesome for her mother. When she and the doctor joined her mother she asked her mother, "Do we have to come back here?"

The third hour opened with Elizabeth telling a story she had heard from her sister about a haunted house. An old witch had a haunted house; a man went in the house and tried to shoot a ghost. In so doing he shot off his own toe. Elizabeth then noticed that the toy gun was broken and asked the female therapist to take it to the male therapist and have him fix it. "But," she added, "don't bring him in here; I don't want to see him for personal reasons." Elizabeth seemed pleased when the female therapist returned with the repaired gun. She broke it again. When the therapist suggested that she wanted the other doctor to fix it again, Elizabeth smiled in reply. The therapist remarked, "Maybe you don't dislike him all the time; maybe sometimes you like him and you want to see if he likes you." Elizabeth seemed annoyed and said, "That's not true." Elizabeth suddenly became irritated. She said, "I don't see why I have to come here; my mother is in there telling that nice lady all sorts of lies about me." She asked if the therapist was the wife of the male therapist. She remarked that he had a nice name.

For the remainder of the hour, she played with the dolls. In her fantasies, the older siblings tattled on a younger girl when she did not take care of the babies. The mother and father punished her by making her sleep downstairs. The mother and father dolls were in bed together and kissed one another.

There were no further interviews because the mother found it inconvenient to come in.

Although our knowledge of Elizabeth's history is incomplete, certain formulations seem warranted. It is evident from her playroom behavior that she felt deprived by her mother and jealous of the other children, who, she felt, received more attention than she. Such a feeling may be partly explained by the number of children in her family. It is likely that Elizabeth's seductiveness

and her manipulative tendencies had in part the function of getting her the attention of which she felt deprived.

Her tendency to play one adult against the other, as she did with the male and female psychiatrists, must have had its origin in her family life. Her manipulative tendency could develop because of the disagreements between her parents, and her tendencies exploited these disagreements.

It will be recalled that Elizabeth's mother was lenient with the children, while the father was strict and punitive. Evidently Elizabeth could get sympathy from her mother after her father had rebuked or punished her. She attempted in a similar way to win the female therapist's sympathy after her play with the "nasty" male therapist. Elizabeth could act out sexual fantasies in relation to the male therapist but then absolve herself (to the female therapist) of responsibility by projecting her guilt about the fantasies onto him. In this way she could feel close to both the male and the female therapist.

Elizabeth's parents also disagreed about her sexual education. Her mother was very frank with the children about sex, while her father disapproved of this frankness. It is likely in this case, as in the others, that parental disagreement favored the child's sexual behavior. Elizabeth, in her sexual behavior, satisfied the very impulse, sexual curiosity, that her mother condoned and her father condemned. It is likely then that Elizabeth could satisfy her sexual curiosity in her relationship with the offender because she believed that her mother condoned this curiosity, and because she could project responsibility for the experience onto the man and win her mother's sympathy for being molested by him.

VI

In the four cases just presented, stress has been laid on specific factors which focus the participant victim's attention on sex and which permit her to act out sexually. In other cases which the writers have studied, however, concern with such specific factors is irrelevant. In these cases, sexual acting out is but one aspect of a profound emotional disturbance which is manifest in all areas of the child's life.

Children of this type are sexually promiscuous; they steal, play truant from school, run away from home and, in brief, have severe behavior problems of many sorts. They are subject to extreme

fluctuations of mood and they react to stress or anxiety with impulsive, frequently self-damaging behavior. They have no friends, and no hobbies. Often they show many pronounced neurotic symptoms such as phobias, tics, nightmares and compulsive rituals.

As would be expected, the parents of these children are severely disturbed. Several of the parents in this series were institutionalized for mental illness. Without exception the children have been subjected, from early infancy, to neglect and to cruel and inconsistent treatment.

Typical of such cases was Pat L., who at the age of four began a sexual relationship with a 54-year-old man which continued until she was 11. Initially, the offender had Pat perform fellatio on him. Later, he had anal and vaginal intercourse with her. He regularly rewarded her for her participation with gifts of candy, fruit and money.

Pat was extremely disturbed. To the male psychiatrist, she seemed withdrawn, lonely and very anxious. She stated that from early childhood she had felt misunderstood and mistreated. She told the psychiatrist that she had to be with people at all times because, when alone, she was terrified of dying. Also, she imagined seeing each member of her family die. She had frequent nightmares which were concerned with death and with the destruction of the world. She expressed the wish that she might be put in a convent because she felt addicted to sex and did not see how she could control herself.

Pat's family reported that she had always been a serious problem to them. From about the age of four, she had violent outbursts of temper. She stole and lied, and cut to shreds new dresses which her father gave her.

Pat's mother had a psychotic breakdown when Pat was born. For two years the child was cared for by an aunt, and then she was returned to her psychotic mother. Her mother neglected her seriously; she often forgot to feed her and occasionally locked her out of the house. She was very inconsistent in her attitude toward Pat; at times she beat her severely without provocation, while at other times she was extremely indulgent. Pat's father was a passive, withdrawn individual who had little contact with his daughter.

In this case, the child's sexual behavior is only one aspect of a general and profound disturbance. Sexual activities, lying, steal-

ing and impulsively aggressive behavior were varied manifestations of her inability to control her impulses effectively.

From another point of view, Pat's sexual behavior may have been particularly meaningful in terms of her feeling that she was deprived by her mother. She received little consistent gratification from her mother, while her relationship with the offender was a relatively stable one. Perhaps she found in this relationship a consistent affection which was lacking in her life at home.

VII

No attempt was made to generalize about the accidental victims in this study. There was considerable variety among them, and the impression was gained that they showed scarcely any more homogeneity than would a random group of girls from the same socio-economic background. None of them possessed those special traits which have been emphasized as characteristic of participant victims.

Mildred A., an accidental victim, differs in important respects from the participant victims described. Mildred was a six-year-old girl who came to the writers' attention through a district attorney's office. Her mother had called the district attorney immediately after Mildred told her the following incident: Mildred had gone to the corner store to get some ice cream for dessert. She returned from the store screaming but still clutching her bag of ice cream. It took Mrs. A. a few minutes to calm her and to elicit her story. Finally she said that a man had grabbed her by the arm as she was walking home and had put his hand over her jeans in the area of her genitals. He had pinched her several times, but she broke away and ran home. Upon hearing about this, Mr. A. took Mildred and went out in search of the man. They found him hiding behind some bushes near the house. Mr. A. beat him and held him until the police arrived.

Mildred's sexual experience and her family's reaction to it differ in characteristic ways from the experiences of the participant victims. In Mildred's case, the offender was a stranger; Mildred received no reward from him and she reported the experience immediately to her parents. The A.'s, unlike most of the families of participant victims, took prompt and decisive action.

Mildred differed from most of the participant victims also in her attitude toward the male therapist and in her playroom behavior.

She was not eager to enter the playroom; in fact she told the therapist she was angry about having to come because she had wanted to go to a movie with her girlfriend that afternoon. She was not particularly interested in the therapist; she was absorbed in her play and did not seem to be concerned about making a good impression. She related some fantasies in connection with doll play which were concerned mainly with teachers punishing and humiliating mischievous children in school.

It was evident that there were certain neurotic difficulties in Mildred's family, but these were not of the sort which specifically characterized the families of participant victims. In the interview with Mrs. A., she expressed no concern about the sexual upbringing of the children, nor was there evidence that she was preoccupied with sexual conflicts. She discussed certain areas of disagreement between herself and her husband, but gave no indication that they disagreed regarding the way Mildred should be brought up.

VIII

This paper has emphasized how conflict within one of the parents or between the parents over a child's expression of her sexual impulses favors the child's acting out of these impulses. It is not the writers' intention, however, to give the impression that there is a mysterious short-circuit between the parents' impulses and the child's acting out of similar impulses. An understanding of the child's acting out must be in terms of the structure of the child's own personality. It has been seen that the conflict in one of the parents or between the parents, over how to deal with expressions of the child's sexual impulses, makes it difficult for the child to develop a consistent and stable conscience that can prohibit the acting out of those impulses.

It may be that the factor of parental conflict in the sexual area has undue emphasis in this presentation. Almost all the mothers who were interviewed described such conflicts, but it is possible that they were motivated by their guilt to look for something in themselves which they could hold responsible for their children's sexual activities.

It should be emphasized that the factors that were found to favor the participant victim's sexual activities are not in themselves sufficient to account for these activities. Other children with similar backgrounds do not become sex victims.

With the foregoing reservations in mind, the factors that seem to favor sexual participation of children with adults may be summarized as follows.

1. *Factors that do not specifically favor the acting out of the child's sexual impulses, but that make for generally poor control of impulses in the child.* Among such factors are deprivation and rejection of the child by the mother and inconsistent attitudes of the mother to the child.

2. *Specific factors predisposing the child to sexual acting out*: (a) Intense sexual stimulation of the child by the parents. (b) Conflict within one parent or disagreement between the parents over the child's expressions of her sexual impulses.

The Langley Porter Clinic
Department of Mental Hygiene, State of California
Parnassus and First Avenues
San Francisco 22, Calif.

REFERENCES

1. Rasmussen, Augusta: Die Bedeutung sexueller attentate auf Kinder unter 14 jahren fur die Entwickelung von Geisteskrankheiten und Charakteranomalien. Acta Psychiat. et Neurol., 9:351-434, 1934.
2. Wortis, Joseph: Sex offenders and the law. Am. J. Orthopsychiat., 9:554-64, July 1939.
3. East, N.: Sexual offenders. J. M. N. D., 103:626-66, June 1946.
4. Ferenczi, S.: Confusion of tongues between the adult and the child. Int. J. Psychoan., 30:225-30 (Part IV), 1949.
5. Dunham, H. W.: Crucial Issues in the Treatment and Control of Sexual Deviation in the Community. Department of Mental Hygiene. Lansing, Mich. 1951.
6. Hughes, J. E.: The Minnesota "sexual irresponsibles" law. Ment. Hyg., 25: 76-86, January 1941.
7. Mayor's Committee for the Study of Sex Offenses. (Morris Ploscowe and John N. Stanislaus.) New York. ca. 1940.
8. Abraham, Karl: Selected Papers. Hogarth. London. 1927.
9. Bender, Lauretta, and Blau, Abram: The reaction of children to sexual relations with adults. Am. J. Orthopsychiat., 7:500-18, October 1937.
10. Eissler, Ruth S.: Scapegoats of society. In: Eissler, K. R. (editor): Searchlights on Delinquency. Pp. 288-305. Int. Univ. Press. New York. 1949.
11. Colm, Hanna: Children's sexual preoccupation as a reaction to difficult family relationships and the parents' anxieties about sex: four cases. J. Child Psychiat., 2:205-20 (Sect. 2), 1951.
12. Johnson, Adelaide, and Szurek, S. A.: The genesis of antisocial acting out in children and adults. Psychoan. Quart., 21:323-43, July 1952.

THE RELATION BETWEEN ORAL AND RECTAL TEMPERATURES IN SCHIZOPHRENIC SUBJECTS

BY C. W. BUCK, M. D., Ph.D., H. B. CARSCALLEN, M. D., AND G. E. HOBBS, M. D., M. P. H.

I. Introduction

In the neuropsychiatric literature of the past two decades, one finds a variety of papers dealing with the study of body temperature in schizophrenia. This has been one of many approaches to a clearer understanding of the apparent physiological aberrations inherent in the schizophrenic process.

In 1934, Carmichael and Linder[1, 2] reported their comparative analysis of the relationship between oral and rectal temperatures in 26 schizophrenic patients and 25 normal persons. With paired, calibrated thermometers, they took twice-daily, simultaneous oral and rectal readings for each subject at 8 a. m. and 4 p. m. for a period of 12 days. Among the calculations derived from these data were: (a) the mean of the individual differences between oral and rectal temperatures; (b) the mean of individual coefficients of correlation between oral and rectal temperatures.

The mean oral-rectal difference was found to be +0.95°F. in the normal group and +.054°F. in the schizophrenic group, while the mean oral-rectal correlation coefficients were +0.56 and +0.73 respectively. It appeared, then, that oral and rectal temperatures were more closely related in schizophrenic subjects than in normal persons.

Recently, these findings have been referred to by Michael[3] in his review of the somatic organization of the schizophrenic patient. He points out that they belong to a small category of observations which appear, superficially at least, to be exceptions to the general finding that the schizophrenic shows an increased variability in his physiological measurements.

II. The Present Study

A. *Method*

In the course of the writers' investigation of body temperature in schizophrenic patients before and after pre-frontal lobotomy,[4] an analysis of rectal and oral temperature relationship was made for a small group of patients.

The method used was comparable to that of Carmichael and Linder with regard to the calibration of thermometers and the technique of recording. It differed, however, in that readings were made at four-hour intervals for a period of four days, giving the same total of 24 readings, but representing more points on the diurnal temperature cycle. Such grouping of temperatures should enhance, rather than interfere with, the analysis of the oral-rectal relationship, for it is well known that both oral and rectal temperatures undergo cyclic diurnal variations.

Fourteen schizophrenic subjects were studied in this manner before and after lobotomy (12 males and two females); they ranged in age from 24 to 44, with a mean of 30 years. (The age range in Carmichael and Linder's study was from 17 to 45 years.) The mean duration of psychosis in the present group was five years.

The control group comprised 10 healthy male volunteers from the University of Western Ontario graduate school of medicine, ranging in age from 24 to 32, with a mean of 28 years. (The age range for Carmichael and Linder's normal group was from 21 to 45.) As in their study, the writers' control group was unavoidably more active than the schizophrenic subjects.

B. *Observations*

For each individual the rectal-oral differential was expressed as the difference between the mean rectal and mean oral temperatures over the four-day period. From the individual differentials, group mean values were calculated. These are shown in Table 1, for the normal controls, and for the schizophrenic patients before and after lobotomy.

Table 1. The Rectal-Oral Temperature Differential in Schizophrenic Patients and in Normal Subjects

	Group mean values		
		Schizophrenic patients	
	Normal controls	Pre-operative	Post-operative
Number of individuals.....	10	14	14
Difference between mean rectal temperature and mean oral temperature	+0.7 (±0.11)	+1.0 (±0.07)*	+0.8 (±0.07)

*Significantly different from normal.

Similarly, group means were calculated from the individual correlation coefficients between oral and rectal temperatures. This

involved the transposition of the "r" values into their corresponding "z" values.[5] The results of these calculations are summarized in Table 2.

Table 2. Correlation Between Rectal and Oral Temperature in Schizophrenic Patients and in Normal Subjects

	Group mean values		
		Schizophrenic patients	
	Normal controls	Pre-operative	Post-operative
Number of individuals.....	10	14	14
Mean correlation coefficient	+0.73	+0.35*	+0.35*

*Significantly different from normal.

The findings of this study were obviously just the reverse of those reported by Carmichael and Linder. The relationship between oral and rectal temperature was seen to be much closer in the normal than in the schizophrenic subjects. The patients, preoperatively, had a significantly higher rectal-oral differential than did the normal group, whereas their rectal-oral correlation was of a significantly lower order than that of the normal subjects.

It is of interest to note that following lobotomy the rectal-oral differential of the schizophrenic group was diminished to a level that did not differ significantly from that of the normal. No group change in the rectal-oral correlation coefficient was evident.

III. Discussion

Several factors in possible explanation of the disparity between these results and those of Carmichael and Linder must be considered.

A

There was a difference in the methods of collecting the data. In the Carmichael and Linder study, readings were made only twice daily (at times which are roughly comparable points on the diurnal cycle). In the present study, readings from six time-points on the diurnal cycle were combined. It is difficult to see wherein this difference in method could yield such totally different results, in view of the fact that both oral and rectal temperatures are subject to diurnal fluctuations. However, to explore this possibility further, a separate coefficient of correlation was calculated for the writers' normal group, using only the 8 a. m. and 4 p. m. readings for rectal

and oral temperatures. A coefficient of +0.80 was obtained, which is even higher than that calculated from all temperature readings. It does not seem reasonable, therefore, to attribute the difference in results of the two studies to this factor.

B

There was a slight discrepancy in age between the present subjects and those of Carmichael and Linder. The greatest difference was between the two control groups, with an age range of 24 to 30 years in the present study, and 21 to 45 in the previous survey. If the mean age of the latter group were known, it would be possible to comment on the significance of this age difference.

C

From other data which the present writers have collected,[4] there is evidence of an important relationship between the pattern of temperature regulation in schizophrenia and the duration of psychosis. It is entirely possible that the patients involved in the two surveys differed considerably in the average durations of illness. Nevertheless, one still is confronted with the difference between the findings in the two groups of normal subjects.

IV. Summary and Conclusions

1. An investigation is reported of the relationship between oral and rectal temperatures in 14 schizophrenic patients before and after pre-frontal lobotomy. Ten normal subjects were used as controls.

2. The schizophrenic group, in contrast to the normals, was found to have a wide difference between oral and rectal temperatures and a low grade of correlation between the temperature readings in the two sites.

3. These observations are the exact opposite of those made by Carmichael and Linder in a report published some years previously. Certain factors which may be concerned in this discrepancy have been considered, but no completely satisfactory explanation can be offered.

4. After lobotomy, the difference between the schizophrenics' rectal and oral temperatures narrowed in the direction of the normal, while no change was noted in the rectal-oral correlation.

5. Comment on the physiological significance of these findings is withheld, for the subject of rectal-oral temperature relationships is still relatively unexplored. The purpose of this report is to emphasize the need for further study of this problem in both the normal and the schizophrenic subject.

Faculty of Medicine
The University of Western Ontario
346 South Street
London, Ontario
Canada

REFERENCES

1. Carmichael, H. T., and Linder, F. E.: Am. J. Med. Sci., 188:68-75, 1934.
2. Carmichael, H. T., and Linder, F. E.: Human Biol., 7:24-45, 1935.
3. Michael, S. T.: PSYCHIAT. QUART., 26:78-86, 1952.
4. Buck, C. W.; Carscallen, H. B.; and Hobbs, G. E.: Arch. Neurol. and Psychiat., 65:197-205, 1951.
5. Fisher, R. A.: Statistical Methods for Research Workers. 10th edition. P. 201. Oliver & Boyd. 1946.

EXPECTATION OF LIFE AND LIBERTY IN PATIENTS SUFFERING FROM FUNCTIONAL PSYCHOSES*

BY A. HARRIS, M. A., M. D., D. P. M., AND VERA NORRIS, M. B., Ch.B., Ph.D.

A detailed description of the follow-up study on which this paper is based, together with the considerations which led to its being undertaken, has already been published (Harris and Lubin[1]), so that here the briefest outline will suffice. A group of patients in London mental hospitals were followed up for a period of 18 years. This group comprised, with few exceptions, all patients under the age of 40 admitted to London County Council mental hospitals in the year 1930 who had never been admitted to a mental hospital previously. The exceptions were: those known to have organic cerebral disease or injury, epileptics, those previously dealt with under the Mental Deficiency Acts, and those whom it would have been impossible to follow up—foreigners who were returning to their native countries. This last category was small, comprising less than 1 per cent of the group.

In 1930, English procedure for mental hospital admission was rigid. Every patient admitted had to be certified insane; there was at that time no provision for the voluntary admission of patients to mental hospitals. Certified patients were discharged: (1) if they were found to be no longer insane by the Hospital Committee or by the Commissioners of the Board of Control; (2) on application by relatives or friends who could satisfy the Hospital Committee that they were capable of caring for the patients on discharge; (3) by operation of law, if they escaped and remained at large for at least 14 days. In practice, applications from relatives were rarely refused; premature applications were a frequent cause of early discharge.

Although Kraepelin's conceptions have been widely accepted there has been no validation of them since his original writings, and lately it has been said that simple demographic data such as age and sex might provide as good or better prognostic criteria. Appeals have also been made from authoritative sources for figures of the length of stay of patients in mental hospitals, data which have been surprisingly scarce so far.

*From The Institute of Psychiatry, the Bethlem Royal Hospital, and the Maudsley Hospital, University of London, London, England.

The diagnoses were based on the condition of the patients during their first week in hospital, and ignore later developments. They depend on three descriptions of the patient's mental state, written in the first week, one by the admitting medical officer, one by the senior medical officer in charge of the male or female side, and one by the medical superintendent. Patients were put into the first group, that of schizophrenia including the paranoid states, only when the diagnosis appeared to be beyond reasonable doubt. These patients showed absence of consistent elation or depression. Such features as bizarre delusions and hallucinations, affective deterioration and fatuity, pathological mannerisms and grimaces, apathy and withdrawal, and senseless impulsive behavior were prominent. The second group, the affective psychoses, was more clearly defined, the patients in it being characterized by consistently depressed or elated mood, delusions or hallucinations in harmony with that mood, retardation or flight of ideas, and evidence of preservation of psychic functioning and rapport with the examiner. The third group, the atypical psychoses, covered a miscellany of states of excitement, stupor, hallucinosis, confusion, episodes of disordered conduct in individuals with clear evidence of psychopathic personality, and a small residuum in which it was not possible to get a reasonably clear picture of the clinical state of the patient from the notes made following admission.

Previously, it had been found, using the technique of *analysis of variance,* that these diagnoses were by far the most useful facts from a prognostic point of view, but that sex and age on first admission to hospital were also of value in this respect. The writers now propose to go more specifically into such questions as: (1) If a patient is admitted to a mental hospital for the first time on account of a functional psychosis what is his/her chance of being discharged or of dying in each of the subsequent years? (2) If he/she is discharged, what are the chances that a subsequent admission will be necessary? At the same time the relative values of diagnosis, age and sex in the assessment of prognosis will be reexamined by a different statistical procedure.

Discharge Rates as an Index of Psychosis

Discharge rates have been used as a measure of favorable prognosis. The discharge rate at the end of a period of time is defined as "*the proportion of the original population discharged by the end*

of that period." For example, at the beginning of the study there were 116 male schizophrenics aged between 20 and 29 years. Of these, 24 (21 per cent) were discharged within one year of admission, eight were discharged after having stayed more than one year but less than two years. In all, therefore, 32 (28 per cent) were discharged within two years of admission. If this group is followed through 18 years of the study, one finds that out of the original population of 116, 47 (41 per cent) did not complete 18 years' residence in hospital.

Discharge rates have been calculated for each age, sex and diagnostic category. The results are shown in Table 1 and in the graph, where the total is broken down into nine groups by age and diagnosis. From these, one can see that in each age and sex group schizophrenics have the lowest discharge rates. The discharge rates decrease with increasing age, with two exceptions: Female schizophrenics aged 20-29 have slightly lower discharge rates than

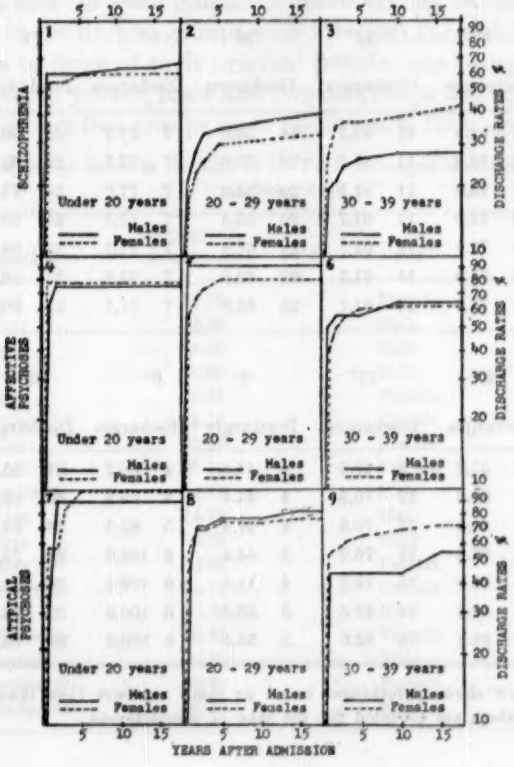


Table 1. Discharge Rates by Sex, Age, Diagnosis and Duration of Hospitalization

	Males—Ages on admission						Females—Ages on admission					
	14-19		20-29		30-39		14-19		20-29		30-39	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
No. at start												
Schizophrenic	30		116		58		20*		71		62	
Discharged after	Discharges		Discharges		Discharges		Discharges		Discharges		Discharges	
1 year	18	60.0	24	20.7	11	19.0	11	55.0	12	16.9	16	25.8
2 years	18	60.0	32	27.6	12	20.7	11	55.0	16	22.5	22	35.5
3 years	18	60.0	38	32.8	14	24.1	11	55.0	18	25.3	23	37.1
5 years	18	60.0	40	34.5	15	25.9	12	60.0	21	29.6	23	37.1
10 years	19	63.0	43	37.1	16	27.6	12	60.0	22	31.0	24	38.7
15 years	19	63.0	45	38.8	16	27.6	12	60.0	23	32.4	26	41.9
18 years	20	66.6	47	40.5	16	27.6	12	60.0	23	32.4	27	43.5
No. at start												
Atypical	8*		12*		36		9*		41		62	
Discharged after	Discharges		Discharges		Discharges		Discharges		Discharges		Discharges	
1 year	5	62.5	11	91.7	18	50.0	7	77.7	23	56.1	25	40.3
2 years	6	75.0	11	91.7	20	55.6	7	77.7	27	65.9	31	50.0
3 years	6	75.0	11	91.7	20	55.6	7	77.7	30	73.2	34	54.8
5 years	6	75.0	11	91.7	20	55.6	7	77.7	33	80.5	37	59.7
10 years	6	75.0	11	91.7	23	63.9	7	77.7	33	80.5	38	61.3
15 years	6	75.0	11	91.7	23	63.9	7	77.7	33	80.5	38	61.3
18 years	6	75.0	11	91.7	23	63.9	7	77.7	33	80.5	39	62.9
No. at start												
Atypical	9*		17*		9*		6*		38		28*	
Discharged after	Discharges		Discharges		Discharges		Discharges		Discharges		Discharges	
1 year	3	33.3	8	47.0	4	44.4	4	66.7	21	55.0	15	53.6
2 years	8	88.8	12	70.5	4	44.4	4	66.7	26	68.5	16	57.0
3 years	8	88.8	12	70.5	4	44.4	5	83.3	26	68.5	17	60.8
5 years	8	88.8	13	76.2	4	44.4	6	100.0	28	73.5	18	64.4
10 years	8	88.8	13	76.2	4	44.4	6	100.0	28	73.5	19	68.0
15 years	8	88.8	14	82.0	5	55.5	6	100.0	29	76.5	20	71.5
18 years	8	88.8	14	82.0	5	55.5	6	100.0	29	76.5	20	71.5

*Column below shows percentages based on small numbers (less than 30 patients). Very small numbers are included for the sake of completeness.

those for females aged 30-39; male affectives aged 20-29 have higher discharge rates than males under 20. In each age and diagnostic category the rates for males and females follow similar patterns, again with two exceptions: Males over 30 with either schizophrenic or atypical disorders have less satisfactory discharge rates than females in the same groups.

It is striking to see how, in almost all the groups, the majority of the patients discharged at any time during the 18-year follow-up left the hospital within a year of admission. In the case of both male and female schizophrenics over the age of 20, however, the discharge rates rose with increasing slowness until the end of the fifth year after admission; thereafter there were but slight rises in the rates. In general, if the patient was not discharged within one to three years of admission his chance of subsequent discharge was small.

In Table 2, the rates have been arranged in descending order of magnitude, and for each diagnosis there are six subgroups. It is found that in the first 10 groups with the most favorable prognoses (two-thirds or more of their original populations being discharged by the end of 18 years), male and female groups are equally represented; there are five groups aged 14-19 years, four aged 20-29 and

Table 2. Discharge Rates at the End of 18 Years Arranged in Descending Order of Magnitude

	Diagnosis	Age group on admission	Sex	Per cent discharges
1.	Atypical	14-19	Female	100
2.	Affective	20-29	Male	92
3.	Atypical	14-19	Male	89
4.	Atypical	20-29	Male	82
5.	Affective	20-29	Female	80
6.	Affective	14-19	Female	78
7.	Atypical	20-29	Female	76
8.	Atypical	30-39	Female	71
9.	Schizophrenic	14-19	Male	67
9.	Affective	14-19	Male	67
11.	Affective	30-39	Male	64
12.	Affective	30-39	Female	63
13.	Schizophrenic	14-19	Female	60
14.	Atypical	30-39	Male	56
15.	Schizophrenic	30-39	Female	44
16.	Schizophrenic	20-29	Male	41
17.	Schizophrenic	20-29	Female	32
18.	Schizophrenic	30-39	Male	28

only one 30-39 years; five of the first 10 groups are diagnosed as atypical, four as affective, and only one as schizophrenic. Four of the six schizophrenic groups occupy the four bottom places in the list, with discharge rates of less than 50 per cent.

In Table 3, are shown the discharge rates for each age group (combining the other variables, in this instance, sex and diagnosis), diagnosis and sex group. Using these rates, the number of discharges at the end of 18 years will be predicted, to see which set of rates gives the most reliable estimate. For example, the discharge rate for all persons aged 30-39 years is 51 per cent. There were 58 male schizophrenics in this age group, and if sex and diagnosis have no effect on prognosis, one would expect 30 of them to be discharged by the end of 18 years. In fact, only 16 were discharged. The expected numbers in each of the diagnosis and sex categories can be calculated, and the significance of the differences between observed and expected numbers assessed by means of the Chi-Square Test. The most reliable predictors (or predictor) will be those for which the calculated number of discharges does not differ significantly from the observed number. In assessing the statistical significance of a result, the writers have taken as their level of

Table 3. Discharge Rates at the End of 18 Years

Category	Original population	Discharges by end of 18 years	
		Number	Per cent
Age group			
14-19 years	82	59	71.95
20-29 years	295	157	53.22
30-39 years	255	130	50.98
Diagnosis			
Schizophrenic	357	145	40.62
Affective	168	119	70.83
Atypical	107	82	76.63
Sex			
Male	295	150	50.85
Female	337	196	58.16

significance $P<.02$: that is, the chance of the result being due to a sampling error is not greater than 1 in 50. However, in each case, the numerical value of the probability is given, so that the reader can interpret the results in accordance with his own convention.

The example, worked in detail in the accompanying table, will illustrate the method. The average discharge rate for all schizophrenics was 40.62 per cent. The table shows the expected number of discharges at the end of 18 years if this rate is applied to all groups of schizophrenic patients regardless of age or sex.

Example of Method

Age	Number in original popn.	Discharges at the end of 18 years Expected	Observed	Chi-square
Males				
14-19	30	12.186	20	5.010
20-29	116	47.119	47	0.000
30-39	58	23.560	16	2.426
Females				
14-19	20	8.124	12	1.849
20-29	71	28.840	23	1.183
30-39	62	25.184	27	0.131

Total Chi-Square =10.599 .10>P>.05

Thus, one can see that the rate for schizophrenics gives a good estimate of the expected number of discharges even though no cognizance has been taken of possible age and sex differences in prognosis. In Table 4, results of similar calculations based on age and sex discharge rates as well as diagnosis discharge rates are shown.

Table 4. Reliability of Prediction Using Discharge Rates in Table 3

Category	Degrees of freedom	Chi-Square	Probability
Age group			
14-19 years	5	1.776	.90>P>.80
20-29 years	5	23.351	P<.001
30-39 years	5	12.138	.05>P>.02
Diagnosis			
Schizophrenic	5	10.599	.10>P>.05
Affective	5	2.150	.90>P>.80
Atypical	5	1.297	.95>P>.90
Sex			
Male	8	22.057	.01>P>.001
Female	8	20.775	.01>P>.001

From this, one can clearly see that the diagnosis discharge rates give uniformly good predictions, for in no case does the expected number exceed the observed number by a significant amount. The age rates give good predictions for prognosis for patients under 20 and over 30, but the age rate for persons in their 20's does not give

a reliable estimate of the number of discharges at the end of 18 years. In other words, the importance of diagnosis as a prognostic criterion is not so marked in the "teen-agers" and 30's group as in the 20's group. The sex rates are useless in this respect, for in both cases the expected numbers, when based on the sex rates, are very different from the observed numbers; the probability of getting such large differences by chance alone is very small.

Readmission Rates as an Index of Prognosis

In the preceding paragraphs, the writers have been concerned with discharge rates alone. A favorable prognosis should indicate not only that the chance of being discharged is high but that the chance of readmission or death is low. (See Table 5.) There were 236 patients who were discharged before completing one year's

Table 5. Readmissions of Persons Who Were Discharged Before Completing One Year's Residence in Hospital

Category	Discharges within one year of admission	Percentage readmitted within 1 year	2 years	5 years	18 years	Average time out (in years), and standard error of mean
Age groups						
14-19 years	48	18.7	22.9	31.2	35.4	2.73±0.94
20-29 years	99	9.1	16.2	21.2	29.3	3.53±0.68
30-39 years	89	7.9	14.6	22.5	24.7	2.23±0.40
Diagnosis						
Schizophrenic	92	9.8	20.7	28.3	32.6	2.30±0.37
Affective	89	7.9	10.1	13.5	18.0	3.94±1.29
Atypical	55	12.7	23.6	32.7	40.0	2.59±0.67
Sex						
Male	102	18.6	26.5	35.3	38.2	1.91±0.36
Female	134	3.0	10.4	14.9	21.6	4.16±0.75
Total	236	9.7	17.4	23.7	28.8	2.87±0.40

residence in the hospital. Of these, 29 per cent were readmitted at least once within the 18 years. If one considers the population according to division into the three age groups, then the youngest group had the highest readmission rate, but the differences between age groups are not significant ($X^2=1.811$; $n=2$; $P>.30$). The oldest group had the shortest mean time out of hospital, the middle group the longest; but the difference, 0.8 years, is not significant (S. E.=1.11, $.5>P>.4$).

When patients are classified by diagnosis the affectives have the lowest readmission rate and the atypical cases the highest. The

differences between the rates for the three groups are significantly large (X^2=9.097; n=2; .02>P>.01). The affectives have also the longest mean period out of hospital, but the difference between the means of the extreme groups, that is of the schizophrenics and affectives, is not significant (difference=1.638 years; S. E.=1.07; .2>P>.1).

The greatest difference in readmission rates is shown between the sexes. By the end of 18 years, 38 per cent of the males and only 22 per cent of the females had been readmitted; this difference is significant (X^2=7.775; n=1; .01>P>.001). The females remained on the average 4.15 years out of hospital before readmission, but the males were out only 1.9 years. This difference, 2.25 years, is also significant (S. E.=0.761; .01>P>.001). It is possible that this difference may be due to social factors.

Fuller reported similar findings in his New York series of 20 years previously (Fuller 1930),[2] the males showing a higher relapse rate than the females; and in a later investigation (Fuller 1935)[3] on the condition of discharged patients, he found a higher proportion of women than of men living at home, economically dependent on their families and regarded as "unsatisfactorily adjusted." This seems to suggest that families tend to be more willing to maintain women in these circumstances than they are to maintain men.

If one considers the 47 patients who were discharged during their second years of residence, that is without completing two years, it is found that 38 per cent of these were readmitted at least once. Although this percentage is greater than the corresponding one for those discharged before one year it is not significantly different (X^2=3.453; n=1; .10>P>.05). Divided by age groups, 17 per cent of the persons aged 14-19 years, 40 per cent of the 20-29 years group, and 44 per cent of the 30-39 years group, were readmitted at least once within 18 years. These differences are not significant (X^2=1.42; n=2; .50>P>.30). For both males and females of this group of 47, the readmission rate was 38 per cent. When these 47 patients were classified by diagnosis, 47 per cent of the schizophrenics, 39 per cent of the affectives and 40 per cent of the atypical groups have been readmitted at least once. These differences are not significant (X^2=.337; n=2; .90>P>.80).

Outcome at the End of 18 Years

Table 6 summarizes the outcome of events by the end of 18 years for the original population. Over 40 per cent of the schizophrenics remained in hospital for the whole period and were alive at the end of the period, while only 6 per cent of affectives came into this category. One-half of the affectives were discharged, were not readmitted and were alive at the end of the period, while only a quarter of the schizophrenics had such a favorable outcome. These differences in outcome are highly significant (X^2=78.5; n=9 (deaths grouped together); P>.001).

Table 6. Summary of Outcome—by Diagnosis

Outcome	All cases		Schizophrenic		Affective		Atypical	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Remained in hospital whole period	193	30.6	154	43.1	8	5.8	31	22.8
Died without being discharged	93	14.7	58	16.2	20	14.4	15	11.0
Discharged, died in readmission period	14	2.1	6	1.7	1	0.7	7	5.1
Discharged, died out of hospital	10	1.6	0	0	10	7.2	0	0
Discharged, not readmitted, alive at end of period	218	34.6	92	25.8	73	52.5	53	39.0
Discharged, readmitted at least once, alive at end of period	104	16.4	47	13.2	27	19.4	30	22.1
All cases	632	100.0	357	100.0	139	100.0	136	100.0

It would seem, therefore, that we can safely conclude from this study that a classification of patients into broad diagnostic categories is valuable for the assessment of prognosis. The reliability of predictions of outcome is enhanced when age and sex, particularly the former, are also taken into account. These results confirm the findings of Harris and Lubin.[1] Most of the information was obtained from the first *five* years of the follow-up study; and this would appear to be the most useful period, if one is interested in making comparisons between diverse groups of patients with respect to outcome.

Mortality

The average annual mortality rates by duration of hospitalization are based on small numbers but it can be seen that tuberculosis had more or less constant rates until the 10-14-year period. The 10-14-year period covered the calendar years 1940-1944. During this time, increases in mortality occurred in many countries, not only in Europe, but in North America and Australia as well (Moriyama[4]). It is interesting to note that the trend is observed even in such a small sample as this. The average annual tuberculosis death rate per 1,000 persons for this period rose to 15. The rates by calendar year for these patients were: 1940=8 per 1,000; 1941=16; 1942=25; 1943=0; 1944=32. Deaths from infections other than tuberculosis occurred epidemically; six of the 35 such deaths were caused by typhoid and dysenteric fevers, 17 were caused by pneumonia. Deaths from exhaustion occurred shortly after admission.

The average annual rates are shown by psychiatric diagnosis as well as by duration of hospitalization and cause of death, in Table 7. Again it must be stressed that the numbers involved are very small. However it can be seen that tuberculosis takes a steady toll of deaths from among schizophrenics, while deaths from this cause occur more sporadically in the other psychiatric groups. The average length of hospitalization of persons dying from tuberculosis was 9.5 years; for other infections it was 5.7 years; and it was 7.4 years for all deaths. The average age at death from tuberculosis was 35.3 years; and 56 per cent of persons dying from that cause were 30 or older. There were, in all, 53 deaths from tuberculosis, that is a rate of 84 per 1,000 original admissions (Table 8); of these, 40 occurred among the schizophrenics (Table 9), giving a rate of 112 per 1,000, while the rate among the other psychotics was only 47 per 1,000. Table 10 shows causes of death by age at admission, and Table 11, the ages at death for those dying from tuberculosis. Table 12 shows the tuberculosis mortality rates by age and sex on admission. For males in each age group the mortality is much higher among schizophrenics. This difference is not so marked among the females who have, age for age, lower rates than the males.

Table 7. Average Annual Death Rates Per 1,000 in Hospital, by Psychiatric Diagnosis, Duration of Stay and Selected Causes of Death

Duration of stay (years)	Schizophrenic: Average pop. during period	Cause of death 1	2	3	Total	Affective: Average pop. during period	Cause of death 1	2	3	Total
1	311	6	0	3	13	97	21	31	31	103
2	252	4	20	4	32	39	0	0	0	0
3-4	227	4	4	0	11	29	2	2	2	5
5-9	208	3	1	0	4	16	25	12	0	62
10-14	190	18	8	0	29	9	0	0	0	0
15-18	163	6	2	0	11	9	0	0	0	0

Duration of stay (years)	Atypical: Average pop. during period	Cause of death 1	2	3	Total	All diagnoses: Total average pop. during period	Cause of death 1	2	3	Total
1	108	0	0	37	46	516	8	6	16	37
2	64	16	16	0	47	355	6	14	3	31
3-4	52	0	10	0	10	308	5	6	2	15
5-9	42	5	5	0	10	266	5	2	0	8
10-14	36	6	6	0	17	235	15	9	0	28
15-18	32	0	0	0	0	204	5	2	0	11

1—Tuberculosis; 2—Other infections; 3—Exhaustion.

Figures in columns 1-3 do not add up to total figures because only certain causes of death have been shown separately.

Table 8. Causes of Death

Certified cause	No. of deaths	Percentage of all deaths	Percentage of original admissions
Cardiovascular	9	7.4	1.4
Tuberculosis	53	43.8	8.4
Other infections	35	28.9	5.5
Neoplasms	4	3.3	0.6
Trauma	4	3.3	0.6
Exhaustion	12	9.9	2.0
Other diseases	4	3.3	0.6
Total	121	99.9	19.1

Table 9. Causes of Death by Psychiatric Category

	Schizophrenic			Affective			Atypical		
	No. of deaths	Percentage of deaths	Percentage of admissions	No. of deaths	Percentage of deaths	Percentage of admissions	No. of deaths	Percentage of deaths	Percentage of admissions
Cardiovascular	3	4.4	0.8	6	17.6	3.6	0	0	0
Tuberculosis	40	58.8	11.2	9	26.5	5.4	4	21.0	3.7
Other infections	17	25.0	4.8	10	29.4	5.9	8	42.1	7.5
Neoplasms	2	2.9	0.6	2	5.9	1.2	0	0	0
Trauma	1	1.6	0.3	3	8.8	1.9	0	0	0
Exhaustion	2	2.9	0.6	4	11.8	2.4	6	31.6	5.6
Other diseases	3	4.4	0.8	0	0	0	1	5.3	0.9
Total	68	100.0	19.0	34	100.0	20.2	19	100.0	17.8

Table 10. Causes of Death by Age on Admission

	14-19			20-29			30-39		
	No. of deaths	Percentage of deaths	Percentage of admissions	No. of deaths	Percentage of deaths	Percentage of admissions	No. of deaths	Percentage of deaths	Percentage of admissions
Cardiovascular	0	0	0	1	2.0	0.3	8	14.0	3.1
Tuberculosis	11	73.4	13.4	28	57.2	9.5	14	24.6	5.5
Other infections	2	13.3	2.4	14	28.6	4.7	19	33.3	7.4
Neoplasms	0	0	0	0	0	0	4	7.0	1.6
Trauma	0	0	0	2	4.1	0.7	2	3.5	0.8
Exhaustion	2	13.3	2.4	3	6.1	1.0	7	12.3	2.7
Other diseases	0	0	0	1	2.0	0.3	3	5.3	1.2
Total	15	100.0	18.3	49	100.0	16.6	57	100.0	22.7

Table 11. Ages at Death of Persons Dying from Tuberculosis

	Males—Age					Females—Age				
Diagnosis	15-29 Per cent	30-44 Per cent	45-50 Per cent	Total No.	Total Per cent	15-29 Per cent	30-44 Per cent	45-50 Per cent	Total No.	Total Per cent
Schizophrenic	7.1	75.0	17.9	28	100	25.0	50.0	25.0	12	100
Affective	66.7	0	33.3	3	100	33.3	66.7	0	6	100
Atypical	0	100.0	0	1	100	0	100.0	0	3	100
Total	12.5	68.75	18.75	32	100	23.81	61.91	14.28	21	100

Table 12. Mortality from Tuberculosis—Rates per 1,000 Admissions

Diagnosis	Males—Age on admission			Females—Age on admission		
	14-19	20-29	30-39	14-19	20-29	30-39
Schizophrenia	200	129	121	100	85	65
Others	59	69	22	133	63	22
Total	149	117	78	114	73	39

These figures confirm the findings of many other investigators, including Dr. William Farr (1841)[5] in the nineteenth century, the Commissioners in Lunacy (1902 et seq.)[6] at the end of the nineteenth century and beginning of the twentieth century, and Oedegard (1951)[7] in Norway, who discovered excessively high mortality rates among hospitalized psychotics, finding especially high rates for tuberculosis. The figures do not help to answer the much-debated question: Is this higher mortality rate to be attributed to environmental factors in the institutions for psychotic patients, to clinical features such as a lack of normal activity and consequent reduction of metabolic processes, or to inborn predisposition, with liability to schizophrenia and tuberculosis being linked in some way genetically?

Summary

From data obtained in a follow-up study over a period of 18 years of 632 patients suffering from functional psychoses, tables have been prepared to show percentages discharged from the hospital and dying in successive years, and the percentages of readmissions of discharged patients. The factors investigated were diagnosis at onset, age and sex; and of these, diagnosis proved to be the most useful prognostic guide. The chance of discharge was high for patients in the first year of hospital life, but, thereafter, discharge was not a frequent event. The presence of an unmistakable schizophrenic picture on first admission made the outlook poor, and such patients over the age of 20 had only a 2 in 5 chance of discharge. Sex appeared to influence only the readmission rates, and these were higher in males than in females; male readmissions on the average spent less time than females outside the hospital between their first and second admissions.

The findings of previous authors concerning the high mortality rates among psychotics hospitalized for long periods, and the particular importance of tuberculosis as a cause of death in them were confirmed.

The Bethlem Royal Hospital
and
The Maudsley Hospital
Denmark Hill
London S. E. 5, England

REFERENCES

1. Harris, A., and Lubin, A.: The prognosis of the functional psychoses. Monatsschr. Psychiat. u. Neurol., 124, 126, 1952.
2. Fuller, R. G.: PSYCHIAT. QUART., 4, 643, 1930.
3. ——: PSYCHIAT. QUART., 9, 95, 1935.
4. Moriyama, I. M.: Publ. Health Reports, 69.
5. Farr, William: J. Stat. Soc., London, IV, 17, 1841.
6. Commissioners in Lunacy. Annual Reports of the Commissioners in Lunacy to the Lord Chancellor, 1900 et seq.
7. Oedegard, Oernulv: Acta Genet. et Statist. Med., II, 141, 1951.

AN INTRODUCTION TO THE APPLICATION OF BOOLEAN ALGEBRA TO PSYCHIATRY*

BY PAUL W. DALE, M. D.

"He put two and two together." This little phrase about thinking springs from a general awareness that the process of thinking and mathematics are related. The phrase indicates that we may not only put two and two together and get four but may also put *this* observation with *that* observation and come to a conclusion—this conclusion being a product of ourselves, of our thinking, and not a necessity of the phenomena observed.

The writer would like to suggest that the manner in which we put two and two together is a characteristic of the human mind, that it can be described and understood, and that such a study is a proper endeavor for psychiatry. Psychiatry must concern itself with the intellectual, as well as the emotional, components of personality. The writer would like also to suggest that a better understanding of thinking can lead us to methods for improving our thinking about psychiatry, which has not yet been reduced to a system of laws, as have some other sciences. This paper proposes a mathematical foundation for psychiatry.

It is fortunate that the thinking process can be described by a system of mathematics; for such a system can lead to techniques for the solution of problems not amenable to ordinary contemplative thought. To put it this way: Long division can be done in the head, but it is much quicker, simpler, and more accurate to use some Arabic symbols on a piece of paper, according to certain rules, to arrive at the answer. So it is in thinking. We can do it in our heads; but for the really tough problems, it is easier on paper, again with symbols, and again according to rules. Furthermore, we can do a satisfactory job in our calculations without each time going to the trouble of deriving the rules. George Boole described a set of rules necessary for this kind of figuring. The rules have been considerably amplified since his time, but the original methods of Boole will serve the purposes of this illustration.

George Boole (1815-1864) was professor of mathematics at Queen's College, Cork, Ireland. The fundamental notion of sym-

*Read, in part, at the 109th Annual Meeting of the American Psychiatric Association, Los Angeles, Calif., May 4-8, 1953.

bolic methods for thinking appears to have come from advanced differential calculus where it was found that symbols like *dx* and *dy*, which have no specific value apart from a suitable function on which to operate, could be handled algebraically as if they were quantities. Boole retained, with slightly altered meaning, the conventional and familiar symbols of operation: $+$, $-$, $\times$, $\div$ and relation: $=$. The notion of what these symbols stand for which was learned in school is not entirely correct for Boolean algebra; but yet, as used here, the symbols are not actually very different from those to which one is accustomed. One's intuitive notion will, the writer thinks, serve for the time being. For those who are familiar with the operational and relationship symbols of modern mathematical logic, the following table of identities is offered:

Boolean	Modern	Verbal
1	1	Class containing all things, the universe of discourse.
0	0	Class which has no members, the null class.
(1—a) or a′	a′	The not-*a class*, everything but *a*.
ab	a∩b	The common part of the classes *a* and *b*. The class that is both *a* and *b*.
a—b	a∩b′	The class *a* except *b*. Class of objects in *a* but not in *b*.
a+b	a∪b	The class *a* and the class *b*. The class of objects either *a* or *b*.
a=b	a=b	*a* is the same as *b* and vice versa. All *a* are *b* and vice versa.
a=vb	a<b	*a* is included in *b*. *a* is a sublass of *b*. All *a* are *b* and some *b* are *a*. (*v* is that portion of *b* so that vb=a).

It is immediately apparent that in a brief paper of this nature it is not possible to present in any completeness the mathematics of Boolean algebra. Furthermore, to present only advanced methods at this occasion would be fruitless, for few psychiatrists can call to mind sufficient mathematics to appraise the subject. Therefore, the attempt will be made, by simple illustration, to present enough of the method to demonstrate its power and versatility.

The elementary methods of Boolean algebra can be easily illustrated and are easier to learn than ordinary numerical algebra. It is of course true, that our minds through schooling are not accustomed to figuring in this way. None of the mathematics that follows is particularly rigorous, but it can be made so.

In the *Diagnostic and Statistical Manual of Mental Disorders** there is the following statement: "A psychotic reaction may be defined as one in which the personality, in its struggle for adjustment to internal and external stresses, utilizes severe affective disturbances, profound autism, and withdrawal from reality, and/or formation of delusions or hallucinations."

Let:

P=psychotic reaction
Q=a personality that struggles for adjustment to internal and external stresses
v=a factor such that: P=Qv

The equation, P=Qv, states that a psychotic reaction is a special kind, v, of a personality struggle, Q.

Let:

a=affective disturbance
p=profound autism
w=withdrawal from reality

It is unclear whether the authors of the manual intended all or only some of the factors, a, p, and w to be present. The statement seems to imply that a psychotic disorder is to be seen as possessing three qualities and not as composed of three classes. The statement is an expression of a logical product and not a logical summation.

Let:

d=delusions
h=hallucinations

One can surmise that the authors meant: formation of either delusions without hallucinations or hallucinations without delusions, or both delusions and hallucinations. In symbols the statement would be:

$$d(1-h)+h(1-d)+hd$$

The complete symbolic statement for the definition of a psychotic reaction then is:

$$P=Qv=apw[d(1-h)+h(1-d)+hd]+apw[1-[d(1-h)+h(1-d)+hd]]$$

The authors by the expression "and/or" clearly mean that if *apw* occur without either h, d, or both, then *Qv* and *P* are nevertheless present.

If hallucinations and delusions are both absent that is:

$$h=o \text{ and } d=o$$

then the expression becomes

$$P=Qv=apw.0+apw.1 \text{ or } P=apw$$

*American Psychiatric Association, Mental Hospital Service, Washington, 1952.

If hallucinations and delusions are uniformly present, that is:

$$h=1 \text{ and } d=1$$

then the expression becomes

$$P=Qv=apw.1+apw.0 \text{ or } P=apw$$

It can thus be seen that the symbolic equation carries along the implication in the verbal statement that psychotic reactions are independent of the presence or absence of hallucinations and delusions in the universe of the mentally ill. Before attempting to translate data into the rigorous language of symbols, it is necessary to ascertain the true import of the words being used. This necessity can hardly be regarded as undesirable by those who value correctness of thought.

Now let us suppose that a state mental hospital desires to select from its patient population two groups for special study. The first is to contain all paranoid schizophrenics and all patients who are not paranoid but who are over 60 years of age. The second group is to contain all schizophrenics over 60 years of age and all paranoid psychotics, provided they are not schizophrenic.

Suppose the director asks: "Will any of the patients be in both groups, and if so, which ones?" One can mull it over and come up with the answer easily enough, but the symbolic method offers freedom from confusion.

Use the following symbols:

1=All patients in the mental hospital
s=All schizophrenics in the hospital
p=All paranoids in the hospital
y=All psychotics in the hospital
a=All patients over 60 years of age, in the hospital
x=Unknown group

The first group is composed of:

$$ps+a(1-p)$$

The second group is:

$$as+py(1-s)$$

For ease $(1-p)$ may be represented by p', and $(1-s)$ by s'.

The individuals common to both groups will be the product of the two expressions:

$$x=(ps+ap')(as+pys')$$

Multiplying the above:

$$x=pas^2+p'a^2s+p^2yss'+pp'ays'$$

A class described the same twice is still the class.

All schizophrenics, that are all schizophrenics, are all schizophrenics. In other words, any class raised to a power equals itself: $s^2=s$; $s^3=s$, and so on.

The expression reduces then to:

	$x=pas+p'as+pys's'+pp'ays'$
Now:	$ss'=s(1-s)=s-s=0$; also $pp'=0$
So:	$x=pas+p'as+py.0+ays'.0$
Or:	$x=pas+p'as$
Factoring:	$x=as(p+p')$
Now:	$p+p'=p+(1-p)=1$
So:	$x=as$

The answer then is: "Yes, there will be some patients in both groups; and these will be schizophrenics over sixty years of age." That is, of course, if in the particular hospital under consideration, *as* does not equal 0.

When discussion undertakes the detection of common classes in a large number of groups, unaided reasoning may fail us; but the algebra of classes provides a practical method of solution. Psychiatric nomenclature is in actuality an intuitive selection of frequently recurring common classes from the large group of mentally ill. That is to say, the class *S*, assigned the term schizophrenia, includes the classes a, b, c, . . . and excludes the classes x, y, z, . . . We do not all of us agree exactly what are the features a, b, c, . . . and x, y, z, . . . It is also true, as we have seen, that definitions are statements of identities—the equation goes both ways. Consequently, the features a, b, c, . . . must be observations of reality, or we establish a system of abstractions divorced from the reality of the disease in question. Once the premises are agreed upon, then the Boolean algebra provides a method for a logical nomenclature.

Sometimes the premises are more difficult to express symbolically than those in the foregoing. Indeed, the chief difficulty found in the practical application of the method is not in the solution, once the premises are determined, but in ascertaining what the premises are. However, a method that forces clear and precise statement of findings and propositions would be helpful in psychiatry by that very fact.

Let us now apply the method to the analysis of a portion of the logic in Karl Abraham's paper on *The Development of the Libido*. In the chapter where he discusses melancholia and obsessional neurosis, one finds the following premises:

1. ". . . in all cycloid illnesses the patient is found to have an abnormal character-formation. . . ."

2. ". . . this character-formation coincides in a quite unmistakable way with that of the obsessional neurotic. . . ."

The phrase "coincides in a quite unmistakable way" admits of several interpretations. It is the ambiguity of such statements that makes the logical analysis of psychiatric literature so difficult.

Let us for the purposes of illustration selectively re-phrase the premises:

1. All the cycloid ill have abnormal character formations.

2. The (abnormal) character-formation coincides with (i. e. has the same components and is part of) the obsessional-neurotic character formation. In this restatement it is presumed that the word "this" in the second premise indicates that the feature "abnormal" is the same in both premises. Abraham is here speaking not of abnormality in general, but of a specific abnormality. Also, it is supposed the word "that" stands for character formations:

Let:

y=Cycloid ill
c=Character formation
a=The abnormality
n=Obsessional neurotic
u and v=Indefinite class description

The symbolic expression of the first statement is:

$$y=vac$$

It is not y=ac, for this would imply that ac=y, and the first premise does not indicate that all abnormal character-formations are cycloid illnesses. The indefinite class, v, delineates that portion of the abnormal character-formations in which the cycloid ill are included.

The second premise is:

$$ac=ucn$$

By transposition the two premises become:

$$y-vac=0$$

And

$$ac-ucn=0$$

In the first equation, if v is all manner of things:

Then $v=1$

And $y-ac=0$

Or, if v does not exist:

$$v=0$$

And

$$y=0$$

The relationship of y and ac irrespective of v is the logical product of these two extremes:

$$y(y-ac)=0$$

Which is

1) $$y(1-ac)=0$$

In the same fashion we can eliminate u from the second equation to give:

2) $$ac(1-cn)=0$$

The first equation interprets as: There are no cases, 0, of cycloid ill, y, not having abnormal character formations, (1—ac). The second: There are no cases, 0, where the same abnormal character formation, ac, does not "coincide" with the character formation of obsessional neurotics, (1—cn). The transposition and elimination of u and v have not altered the truth of the equations. The same equations could have been arrived at directly had we in our thoughts chosen to convert the two propositions into this form.

The mental process of "putting two and two together" is accomplished in Boolean algebra by combining these two equations in a sum set to zero.

$$y(1-ac)+ac(1-cn)=0$$

Or $$y-acy+ac-acn=0$$

Now from an understanding of the universe of things that Abraham was discussing it is apparent that c=1; that is: All cases have a character formation. We could also choose to eliminate c as we have u and v before.

Then $$y-ay+a-an=0$$

If $$a=1$$

$$y-y+1-n=0$$

$$1-n=0$$

Of if $$a=0$$

$$y=0$$

The product, thereby eliminating a, which is analogous to the "middle term" of Aristotelian logic is:

$$y(1-n)=0$$

The direct interpretation of this expression is: There are no cases, 0, of cycloid ill, y, not obsessional neurotic, (1—n), or by verbal transposition: The cycloid ill are obsessional neurotics. Again, of course, it is not implied that all obsessional neurotics are cycloid ill. The most that can be said is that some of them are.

This is Abraham's conclusion: ". . . patients suffering from circular insanity exhibit the same characteristics as psycho-analysis

has made us acquainted with in the obsessional neuroses. . . ." Very different conclusions could be reached, depending in what manner the ambiguity of the premises is resolved.

Boolean algebra is a general method, and we may solve the equation for any term we desire. Let us from these same premises seek a description of the character-formation of obsessional neurotics.

Our equation was:

$$y - acy + ac - acn = 0$$

Eliminating a:

$$y(y - cy + c - cn) = 0$$

Or

$$y(y - cn) = 0$$

Or

$$cn = \frac{y}{y}$$

The equation $cn = \frac{y}{y}$ is not in an interpretable form. We must resort to a special technique for the expansion of a Boolean function, f(x).

A fundamental theorem of Boolean algebra states:

$$f(x) = f(1)x + f(0)(1 - x)$$

The function to be expanded is $\frac{y}{y}$

If $y = 1,\ f(y) = \frac{1}{1} = 1$

If $y = o,\ f(y) = \frac{0}{0}$

Then

$$cn = y + \frac{0}{0}(1 - y)$$

Now $\frac{0}{0}$ is a completely indefinite case; it is not zero, nor is it infinity.

Therefore, the interpretation of

$$cn = y + \frac{0}{0}(1 - y)$$

is: —The character of the obsessional neurotic, cn, is found in all the cycloid ill, y, and in an indeterminate number, $\frac{0}{0}$, of the non-cycloid ill, (1—y). Ordinary thought processes will show this to be the complete statement of the case with the available premises.

Careless thinking might overlook the class with the co-efficient $\frac{0}{0}$ of —.

The method also has interesting applications in the analysis of probability and determination of causation.

The following table can be established when any number of unrelated events, x, y, z, . . . are assigned the respective probabilities of p, q, r, . . .

Verbal	Boolean symbols	Probability
x occurs	x	p
y occurs	y	q
x does not occur	1—x	1—p
concurrence of x and y	xy	pq
x and y conjointly fail to occur	(1—x)(1—y)	(1—p)(1—q)
either x or y occurs (not both)	x(1—y)+y(1—x)	p(1—q)+q(1—p)

It can be seen that the probability expression corresponds to the symbolic statement.

Suppose we examine all married persons and find that the probability that a wife has alcoholism is p and that a husband has alcoholism is q. If the occurrence of the event p is unrelated to the event q, then the probability that both the man and wife have alcoholism is pq. We can conclude that alcoholics select or reject other alcoholics for mates, if, and only if, actual study reveals the occurrence of man and wife both being alcoholic is unequal to pq—a selection would produce a value greater than pq and a rejection less than pq.

In a series of events of any number, if it is desired to learn whether there is a relation between the occurrence or non-occurrence of any grouping of these events, i. e., whether one event "causes" another, then the symbolic tool provides a method of solution. The example is a simple one, more complex interrelations are solved by the symbolic method for the probabilities desired.

• • •

If this be an introduction, what lies ahead?

Albert Einstein posed the questions: "How can it be that mathematics, being after all a product of human thought independent of experience, is so admirably adapted to the objects of reality?" It seems that the answer to this question lies in the study of psychiatry and neurophysiology. That is, mathematics, and more particularly mathematical logic, are manifestations of a nervous system

in operation, and this nervous system is seen to operate in the same fashion as other elements of the universe.

The word "proof" which in effect means "I will show you how your thinking on the matter agrees with mine," implies that the operation of one man's intellect is the same as another's. The worth of the labors of mathematicians relies on the expectation that the manner of "putting two and two together" is the same for all. It remains for neuropsychiatry to show that this is, or is not, the case. Whatever the outcome, the further study of the mathematics of logic should assist us in learning more clearly the manner of the operation of this nervous system, not only the intellect, but probably the unconscious and vegetative portions as well.

Psychiatry relies heavily on language. It should be remembered that language itself is a system of symbols, both auditory and visual; and the syntax is not different from the algebraic manipulations demonstrated in this paper. Our thoughts are supported in this language lattice. The mathematics of logic provides psychiatry with a method for further comprehension of language and its significance in human behavior, as well as a method for greater precision, and less ambiguity in the manipulations of language.

Each field of science and other area of human endeavor can be described as composed of a set of features. The set for one could be consolidated into the single expression, a; for another, b; and so forth. If m be the feature, mental activity, then it must be that for each field a new set can be found such that:

$$\begin{aligned} a &= xm \\ b &= ym \\ c &= zm \end{aligned} \qquad \text{and so forth}$$

Or, as shown before:

$$\begin{aligned} a(1-m) &= 0 \\ b(1-m) &= 0 \\ c(1-m) &= 0 \end{aligned} \qquad \text{and so forth}$$

Thus, the further characterization of m has application in all fields; which is to say, the more we learn of mental function, the more will be known of the fundamentals of all science. Which is also to say: Without the mind there is no science.

In the field of psychiatry we have a special situation. The mind is known only by its activity as we see it in ourselves and in others.

There is the problem of the mind knowing itself. The question is akin to the proposition of "Maxwell's Demon": Must the fact of observation of mental activity simultaneously alter that activity so that no true picture is possible?

The problem of the mind knowing itself also seems to the writer very much like the problem of whether any theory for a logic can include methods of reasoning strong enough for the proof of its own consistency, which a theorem of Godel shows, is not possible. No logical system of this type can contain all valid modes of reasoning. If the analogy be a correct one, then it would seem impossible to use the mind's gift of reasoning to comprehend that mind fully and that other manners of thought and feeling are required.

The general symbolic statement, valid for all classes and propositions in the Boolean algebra, that:

$$x(1-x)=0$$

Or

$$x=x^2$$

is a very ancient axiom.

"It is impossible that the same quality should both belong and not belong to the same thing."—*Aristotle.*

This relation chiefly distinguishes the algebra of logic from ordinary algebra. It is seen that we deal with only two quantities; something that is, and something that is not. It is here that the mathematics of logic and binary computation so useful in electronic computors have a common point. It is this common point which would permit certain calculators to handle psychiatric data even though that data, as in psychoanalysis, seldom contains numbers. It is also of interest to note that the nervous system operates according to the same law or in a binary fashion. An impulse traverses the synapse, s, or it does not (1—s). In neurophysiology this is the "all-or-none" law of nervous activity. We are then led to:

$$s(1-s)=0$$

as a statement of the fundamental operation of the nervous system. This equation for the synaptic unit corresponds to the foregoing basic axiom requisite for the Boolean calculus of logic. From a multiplicity of such units, come all that we recognize as nervous system function. It is not beyond reason to presume that these units are built up in a Boolean algebraic fashion. McCulloch and Pitts have shown how this may be.

Of more immediate practical concern, Boolean algebra and its modern extensions should provide us with a means to approach exactness in the examination of the foundations of psychiatry, in the same manner as Whitehead and Russell attempted some years ago to examine the foundations of mathematics. As a practical technique, this algebra provides a powerful tool for the solution of problems in psychiatry which have not been accessible to other methods.

If psychiatry is to be a science, with a logical and mathematical foundation, it seems to the writer that it will become so in this manner.

SUMMARY

Recent developments in mathematics make it no longer necessary to rely on the unaided thought processes in the solution of the complex problems of psychiatry. The physicist has long since given up trying to solve problems in his head but instead turns to various mathematical tools. Scientific psychiatry has reached the point where mathematical instruments are necessary. The calculus proposed by George Boole, sometimes known as Boolean algebra, which is the forerunner of mathematical logic, provides a method for the solutions of non-numerical problems so characteristic of psychiatry.

The operations of the Boolean algebra are seen to correspond to the operations of the nervous system, and this correspondence is probably not coincidental.

Stamford Hall
Stamford, Conn.

BIBLIOGRAPHY

Abraham, Karl: Selected Papers. P. 423. Hogarth. London. 1949.

Boole, George: The Laws of Thought. Dover Publications, Inc. New York. 1854.

McCulloch, W. S., and Pitts, W.: A Logical Calculus of The Ideas Imminent in Nervous Activity. Bull. Math. Biophs., 5:115, 1943.

Rosenbloom, Paul C.: The Elements of Mathematical Logic. Dover Publications, Inc. New York. 1950.

Whitehead, A. N., and Russell, B.: Principia Mathematica. Cambridge University Press. Cambridge. 1925.

Wiener, Norbert: Cybernetics. Wiley. New York. 1949.

ARCHAIC BEHAVIOR AND THE COMMUNICATIVE ACT

(*The Meaning of Stretching, Yawning, Rocking and Other Fetal Behavior in Therapy*)

BY JOOST A. M. MEERLOO, M. D.

1. Introduction

In a former study on archaic communication (1949) the author found a relation between the *communicative* act and a more general biological adaptive phenomenon connected with separation and individualization, both of which increase the need to transfer inner occurrences and the need to bridge the space between entities. If no direct physiologic conduction of stimuli is possible, alarm signals have to be used. In therapy, the fact is experienced that a person makes use of a varied combination of communicative means, of innate, biological, and archaic signs and of cultural, acquired ones: symbols, myths, verbalizations, and so forth. On special occasions, the hidden archaic signs and responses come to the fore as, for instance, in impending danger; in an increased mating urge; after broken interhuman relationships; in a difficult transference relationship; in the re-establishment of broken contact.

Eisenbud, Ehrenwald and others have proved and particularly emphasized—following Freud's suggestion—a direct unconscious exchange as experienced in the phenomenon of telepathy. One may look upon this as a part of a usually repressed, archaic instinct of communication. Everything that lives communicates, often along mysterious pathways, unexplored as yet by physical science.

This paper aims to call attention to another group of archaic responses, an innate signal code not so hidden and repressed, more directly observable, yet related to the former phenomenon. In psychotherapeutic sessions, various movements and gestures come through, part of which must be explained as originating in an earlier—archaic or even intrauterine—existence of man. Up to this time not much clinical attention has been given to these involuntary signals. Yet, knowledge of fetal behavior and its adaptive responses is of importance for the knowledge of later patterns of behavior.

This discussion will be clinical, surveying the known symptoms. Further research will bring deeper insight into these manifestations of early human existence. Increased attention will provoke better observation of phenomena that are so easily overlooked.

2. Fetal Behavior

The simple adaptive responses in fetal life have been called to attention in particular through the work of Minkowski, Christoffel and collaborators. Fodor's intuition and observations added psychological data to this new field of exploration. Physiological observations of abortions and prematurely born babies, and study of the normal infant during the first days of life have increased our knowledge.

In short, we may now say that, from the eighth intrauterine week, the embryonal organism lives in a total rhythmic behavior, and reactive and protective movements are noted. The rhythmic heartbeats of both mother and child dominate all other motions with their rhythmic movements. This may be of importance because some schizophrenics in analysis or hypnosis spontaneously show these forms of rhythmic movements. Gradually however, other non-co-ordinated movements, as responses to external stimuli, come to the fore, such as general mass action, a bending of the axis and a folding together. In respect to this, one may already speak of an early adaptive response and a primitive intelligence.

In the second half of intrauterine life, it is possible to speak of spontaneous behavior—there is active rotation, flexion, and stretching. Every mother knows about this lively life of her child within. There is skin sensitivity, especially around the mouth and nose, drinking of amniotic fluid, hunger and thirst. Bowel movement and defecation of meconium can take place before birth.

Minkowski in particular indicated that various sensory activities are going on before birth. The skin is sensitive, there is a localizing response to touch, the limbs move in the direction of the cutaneous stimulus. There is mnemic function and a primitive pain sense in the fetus, a moving away of a limb after too strong stimulation. There are labyrinthic responses, the olfactory function is ready—very vivid olfactory impressions are present early, as is known from dream analysis. The fetus reacts to loud noises and before birth there is a well-developed auditory receptor (Carmichael, 1951). From analysis of dreams, it must also be concluded that there are various intrauterine sound reminiscences; this means that there have been general auditory impressions without the means of putting them in a verbal mnemic pattern.

Strictly speaking, man's daily return to sleep and the fetal attitude belong to this chapter on fetal behavior. However, that subject would require a more elaborate neuropsychiatric investigation.

Another future subject for study is the manner in which these archaic responses may be used in the sum total of innate, acquired adaptive behavior of the individual.

Psychopathology has already taught that these functions may be used variously by the individual, depending on his personal history. They may be causes of unconscious *reminiscence,* as is often seen in psychotherapy. They may be used as defense against maturation, they may be *displaced* toward other functions, physiologically and psychologically; they may be employed to deny that a person is functioning adequately. However, to keep the subject as simple as possible, the present paper will stress only the reminiscing and communicative action of the regression to archaic functions.

3. Rhythmic Responses

Archaic Rhythmization

In the course of psychotherapy, one finds several forms of rhythmic expressions which may be related to the total rhythm behavior of early fetal life. In deep hypnosis or in periods of deep compulsive silence in schizophrenics and borderline cases, rhythmic movements of muscles or part of the extremities may be seen. This rhythm has a higher frequency than the active heartbeat, and in all these cases it represents a deep regression. The writer would call this not so infrequently observed phenomenon reminiscent of the archaic rhythmization of the body.

One schizophrenic patient who came to the writer for therapy after he had been in analysis with others, was himself very much aware of such rhythmic muscle contractions. He indicated that these also occurred after periods of furious and excessive masturbation.

Because of her unbroken silence, another patient, a woman, had gone through several analytic treatments with various therapists at irregular intervals. The only observable evidence of communication, besides a cataleptic attitude on the couch, was a rhythmic contraction of her foot with a frequency of 130 contractions a minute. When this was interpreted as a sign of communication, she became furious, but actually started to be more communicative.

Head-Banging, Jactatio Nocturna

Night-time head-banging often makes a frightening impression on the mother. It is done with a compulsive excitement, the head banging rhythmically against the pillow or the wall. It looks like a myoclonic attack, but even more like a reproduction of an infantile situation. The conscious aim of children who act in this way is to fall asleep, to "bang" themselves into sleep. In their regressive frenzy, they increase the frequency of their banging until they fall asleep exhausted. One may sometimes observe an *"arc de cercle"* and erection in such children.

Fitzherbert explains head-banging or head-rolling as an ambivalent return to the bliss of being nursed in mother's left arm, when mother's heartbeat is heard and felt by the child. He found this often in children who suffered early deprivation.

The writer himself has found this symptom in quite normal children, but also in two cases of borderline psychosis where the regressive tendency went further back. Both patients associated to it: an aggressive banging through mother's "wall" in order to go back to nirvana (sleep).

In one patient with *jactatio nocturna,* there were memories of hearing his own heartbeat when his head was on the pillow as a child. With them were associated primal scene memories and ecstatic orgastic feelings that came every time after a period of head banging.

Rocking and Dancing

It is the innate wisdom of every mother that leads her to put her child to sleep by rhythmic rocking movements. In doing this, she is but repeating the oceanic memory of the child, when it was floating around in the amniotic fluid, when it had no weight and was lighter than air. Later in life, we grown-ups seek to repeat the same rhythmic contentment in our rocking chairs. The awareness that many of these archaic feelings and womb memories are involved in dancing was expressed to the writer by two patients. One was a male dancer, a schizophrenic, who tried in his dancing to arrive at the archaic feeling of being lighter than air. He rebelled against the force of gravity. The other patient was a jazz player, a drug addict, who sometimes needed only the increased rhythmic excitement of the jazz music in order to provoke the nirvanic, ecstatic bliss that otherwise only the drug could give him. Even in our social dancing, the collective ecstasy of nirvanic reminiscences

comes back. The dance is an identificatory movement used by primitive man for an identification with animals and a magic defense against them.

This is only a short and superficial survey of the impact that rhythm has on our deepest emotions and responses. In a former paper (1948) the author showed how part of our concept of time is related to it, also how our deepest communications are influenced by rhythmic phenomena (music, poetry, verbal inflection). Rhythm and dancing are universal forms of communication, as we can observe in bees. Rhythm expresses a magical taking part in the various rhythms of the world; it increases participation still further. For the present purpose, it is enough to show that during the therapeutic sessions rhythmic phenomena may have a deep communicative meaning indicating some tendency to seek prenatal bliss.

4. Archaic Oral Behavior

Through postnatal psychology, we have become familiar with the concept of the mouth as an organ of reality testing. The outside world is brought into the mouth to be tested and swallowed. From the fourth intrauterine month, a slow muscle contraction, comparable to those found in mollusks, is going on. From time to time, the fetus opens its mouth and swallows amniotic fluid. This has been repeatedly observed, through the abdominal wall of the pregnant mother, as a slow-frequency, rhythmic contraction of the oral end of the fetus. This archaic process is not in the service of accumulation of food; some explain it as a primary *wet inhalation,* perhaps a reaction to some discomfort. Remnants of this oral wet inhalation, however, are found also in the yawning reflex.

Breathing in general is perhaps our most archaic active contact with others—we all breathe the same air. The child *in utero* breathes in a fetal way; in the meantime, it is yawning, stretching, drinking the amniotic fluid, which means drinking the mother. In any later form of contact, breathing, pneumatic union, absorbing the other one, drinking from the same air plays a role, especially in fantasy life. Pathological variations of this pneumatic contact are found in asthma where we may sometimes speak of the fantasy of pneumatic incest.

Oral Incorporation

Oral incorporation is mentioned here only because its impact on the psyche is well known, as described in an elaborate psychoanalytic literature.

Yawning

Psychologically we know that yawning has to do with reminiscences of sleep; but, beyond that, it may indicate also hunger and boredom and even pleasurable leisure. It is a very contagious movement. One person is easily induced by another's yawning to yawn himself. Sometimes compulsive yawning is indulged in with pleasure—orgastic pleasure. Some people yawn when they glide in their rapidly speeding cars, behind the wheel, through the landscape. The word "yawning" is direct onomatopoeia; this makes us aware that it is part of a deeply-founded body function. Yawning-pleasure is seen in the infant, not only when he is sleepy but also when he is satisfied.

Yawning represents yearning for something archaic; it is a remnant of a fetal response. The reflex may last for many seconds, with deep inspiration and expiration. It may be nearly unexpressed behind the hand before the mouth.

Clinically, the writer found yawning in one patient to be an initial sign preceding an epileptic fit. In the analysis it was associated with a yearning for the breast, or for something even more deeply nirvanic, and was then followed by a furious epileptic attack because of the denial.

How deeply yawning and yearning are related came to the fore in a manic-depressive patient who went through twilight states in which he experienced complete union with the prenatal mother. Consciously, this was a frightening experience for him. However, it always announced itself by periods of compulsive yawning, making it possible for him to go home and surrender more freely to his reminiscences.

In such a twilight state, the patient had all kinds of telepathic experiences, described in a former publication (Meerloo, 1949).

Yawning plays a greater role in the therapeutic situation than is often realized. *The therapist also yawns.* One cannot always interpret this as a form of negative transference, because the increased communication in the therapeutic situation may easily lead to a common archaic fantasy.

Sighing

Ordinary sighing and compulsive sighing are reminiscences of early infantile escape reactions in which birth panic plays a role. Sighing in analysis means a reminiscence of an escape from fear.

Thumbsucking

Thumbsucking is found in fetal life and compulsive sucking may, in its mnemic roots, go back even earlier than the breast-infant relation. The same is true for *sneezing.*

Smiling

Smiling is generally recognized as an automatic transmitter of an infantile mood. It is related to the infant's satisfaction after being fed, when it withdraws its lips from the breast and falls asleep.

Coughing and Defecating and "Breaking Wind"

Coughing, defecating and "breaking wind" are observed as fetal rejection and evacuation of intrusion into the body. We know that some mothers describe such sounds as made by their unborn babies. This is interpreted as fetal crying. The simplest explanation is that it is fetal evacuation.

A schizophrenic explained his compulsive passing of flatus as an omnipotent destruction of the outside world. For him it was a throwing out and a soiling at the same time—and an imitation of the omnipotent voice of father.

In these matters, one finds again that the archaic reminiscence has a tremendous power of contagion. Listen, for instance, during the intermission of a concert. One person coughs, and this archaic sign starts others coughing.

Christoffel traces the smoking compulsion back, not only to reminiscence of infantile smiling after oral satisfaction, but also to a repetition of infantile wet-breathing.

5. Archaic Motoric Response and Contagious Movements

In the motoric field, there is tremendous fetal activity. Mass-behavior that is comparable to tantrums and epileptic fits in post-uterine life has already been mentioned.

Stretching by the fetus is observed as early as the second month of fetal life. It is generally interpreted as an infantile joy, a being free of fear, a pleasant reaction, a similar feeling to the one we have when we stretch as adults.

One of the writer's patients—a case of anxiety hysteria—started to stretch himself repeatedly during the analytic hour, exclaiming with feelings of joy and pleasure. In the course of the analysis this stretching was related to feelings of liberation from the maternal domination, to an experience of new activity, to stretching and going out of the womb. Later on he experienced spontaneous new associations in which the stretched body represented the erect penis.

Peculiarly enough, the unconscious sexual meaning of *stretching*, of this pleasant orgastic manifestation of the body, is kept alive in social taboos. The German word for it, *"rekeln,"* the Dutch word *"rekel,"* and the English word *"rascal"* are all derived from a similar origin (Christoffel, 1951). Stretching, erection, hypnotic catalepsy (as seen in Yogi), belong to a common regressive womb-fantasy.

Bending and huddling up represent the opposite fetal reaction. A remnant of this hiding position may be found in the background of many a fright reaction, and it is seen in the usual "fetal" hiding position under the blankets in bed. In some catatonics, this attitude is even continual.

One sees, on the couch, from time to time, the same defensive, regressive attitude of patients, especially in borderline cases.

The stereotyping of movements, the remembering of rhythmic archaic responses can also be seen in frustrated animals, as one observes them for example in the zoo.

Laughter

The sudden relief brought by laughter has to do with the intrauterine defensive mass-reaction already mentioned, and is psychologically related to epileptic fits. It is an ambivalent response to a stimulus in which something is conquered (a traumatic experience) and in which one originally let go of something—aggression, urine, stools. In special neurologic conditions, laughter comes to the fore as sham-mirth, as one sees in cerebral paralysis or in narcolepsy when hypothalamic centers are affected. This is an example of the way disinhibition of mental functions may simply provoke motoric outbursts and fits of laughter.

It may seem strange to consider unexpected laughter (to be distinguished from laughter expressing comedy and humor) as part of an intrauterine defense reaction. However, in pathology, one experiences this type of laughter as a tremendously contagious

bodily reaction. Primitives, listening to a phonograph recording of roaring laughter, begin to laugh themselves and cannot stop. We all sometimes experience the way in which sudden laughter causes a feeling of paralysis—we are put *"hors concours."*

In psychotherapeutic treatment, fits of laughter play a peculiar role.

One patient, a manic-depressive, got laughing fits when he was tired and warm. Once, as a result, he had an epileptic fit, but mostly he laughed himself into a paralytic state.

A schizophrenic girl started to laugh purely as a defense mechanism; her laughter was mocking and hiding at the same time, although in her movements it was also converted to more orgastic satisfaction.

For the present purpose, it is sufficient to know that part of the basis of laughter is a regressive reminiscence, and it is this that makes it so tremendously contagious. The joke that calls forth an outburst of laughter relieves deeply repressed feelings suddenly. One of the writer's friends could not stop laughing after a joke which concerned anthropophagic tendencies.

6. Archaic Skin Behavior

The skin, as our first physical boundary and organ of reception and defense, plays a tremendous role in psychosomatic afflictions. Here are experienced many defensive reactions which may be compared with intrauterine skin reaction, all on an archaic, rudimentary basis.

The skin has its rudimentary motoric defenses—like the skin of horses in which rudimentary muscles play a role (platysma, pilomotoric reflex). *In utero,* the skin is not yet exposed; it moves in the warm amniotic fluid. There is no *shivering* and *shuddering,* no creeping feelings are felt. These begin at birth. And many later shiver-reactions in therapy mean a protest against exposure.

In popular mythology, such archaic skin reactions play a role. When you get gooseflesh, somebody is "walking over your grave." Unconsciously, the reminiscence of prenatal reaction to danger is revealed in such popular sayings.

A patient who has been described elsewhere (Meerloo, 1949) told how he, while walking along the street, suddenly felt a shiver reaction, together with panicky feelings. When he later on sought to find out why this sudden panic had come up, he learned that a good friend had died and that his panic represented telepathic apprehension of that fact.

Camouflage Reactions (Chameleon Reactions)

Camouflage reactions are often observed. They play a role in many unexplained dermatological manifestations, such as neurodermatitis, rosacea, melanosis. Melanosis was observed particularly as a fear reaction in the trenches of World War I. The skin is an organ of display; of weeping in eczema, of flushing in rosacea, of mimicry in gooseflesh, of infantile sexual dependency—also expressed in eczema. Many dermatoses symbolize the need for continual skin contact, such as the infant experienced *in utero;* or symbolize the rejection of contact. One finds them especially in rejected children.

A patient, an alcoholic addict, got eczema only when he was "dried up." Under the influence of his drugs he was easily able to bring himself into the nirvanic state of the womb. In periods of abstention, he acted his dependency needs out with his skin. He showed the analyst that he wanted to be "wet" again, but also that he wanted more skin attention.

Often the skin is used as a substitution in masturbation, especially in itching dermatoses. The underlying fantasy is that of a shedding off of the skin, or a tearing away in the service of fusion with the mother. This suggests the desire to be in guiltless contact. Some dermatoses may also be a defense against the wish to be touched, as the writer has observed in some latent homosexuals. There is the wish to fuse, combined with the fear of being eaten, swallowed up by the stomach. The Bible fantasy of Jonah in the whale is repeatedly reproduced by patients in conjunction with skin rash.

Rash and skin eruptions may often be interpreted as symptoms of deprivation, of not enough attention. But this situation is always ambivalent: It expresses a wish for contact—the retrogressive intrauterine incest fantasy—and at the same time, the rejection of contact because of fear of contamination.

A schizophrenic patient was always picking her skin. This caused her secondary trouble through inflammation. The picking was explained as doing away with the place of possible contact with other people.

In schizophrenic symptomatology, archaic skin behavior and archaic skin language play a paradoxical role. By calling attention to some skin reaction (through the acting out of some deeper regressive wishes?) the patient is often able to establish better contact with the therapist. In the case of one of the writer's patients, there was only verbal contact as long as the skin disease

lasted. It was as if the analyst were allowed to communicate only through the open pores of the skin. As soon as the skin was healed the psyche was closed off.

For the present purpose it is important to be aware of how contagious these archaic expressions are. We all itch and get a *"kitzel"* reflex when patients or friends mention the foregoing symptoms. Many people cannot see eczema without becoming itchy themselves. Scratching is a contagious movement.

7. Archaic Reaction of the Senses

As was pointed out in the introduction, our senses are ready for function at birth, and we have learned from dreams that there are archaic memories of sensory responses originating in the prebirth and birth period. Because of a lack of ego and of verbal images, these mnemic imprints have to be translated later on into postnatal verbal symbols—which makes acceptance of these early impressions highly hypothetical. Nevertheless, spontaneous associations of patients in dream analysis tell us that there is an early sound-world, that there are reminiscences of an early musical world, a world of splashing sounds (birth), related to archaic, auditive fears. It is known that the fetus reacts to sounds; and, from analysis of musicians, we know that there are very early reminiscences of a nirvanic musical world, a sound-nirvana.

Some eye impressions, especially those of color, are perhaps related to very early experiences in childhood. The color dream often takes one back to very early reminiscences.

Smell is usually developed more highly in the infant than in grown-ups. Our smell world gradually becomes repressed—partly as a result of cleaning compulsions and a smell taboo. Groddeck has directed attention to the fact that archaic smells play a role in the mother-infant relationship and in the child's experiences during the act of birth. One of the present writer's patients lost his sense of smell very early in life as an act of defense against aggressive fantasies toward his mother.

8. Intrauterine Orgasm

As already seen, the fetus must have all kinds of mnemic impressions as a result of rhythm, adaptive mass-reaction and defensive movements. Yawning and stretching are reactions combined with feelings of lust. The question arises as to how far we may be justi-

fied in speaking of a fetal play with the fetus' own body. In the treatment of schizophrenics, one is very much aware that for them the masturbatory act relates not only to sexual fantasies, but serves more often to revive nirvanic ecstatic feelings. Masturbation is for them a means of retreat to early orgastic experience; it is a yearning for the womb.

In one catatonic patient who had lived for years in an institution without mental contact with the outside world, the writer could observe that during masturbation, he brought himself into a stretching *arc de cercle,* and both big toes came into a Babinski extension. Neurologic examination later on was completely negative.

Masturbatory play is too often interpreted as a compulsion combined with sexual fantasies. In therapy, one sees that it is often related to escape fantasies from primary danger—from birth trauma; it is related to going back to infantile bliss, to reaching out for mother's breast. Parental taboo increases the feeling of danger, and the compulsion to escape leads to new masturbation—truly a vicious circle. Sex, as such, is a symbolic feeling, with a yearning for nirvana.

Some pains that are felt around the urachus and the umbilicus, and eczema around the navel also hark back to intrauterine lust impressions.

Of theoretical importance for us, is the fact that the drive toward communication is related to a sexual drive on the one hand, and to the fear of separation on the other (Meerloo, 1952). During the rutting period in animals, their communicative actions increase through exhibitionism and intensified smell communication. There are similar phenomena in man, but more repressed. Compulsive masturbation is in many borderline patients an expression of a desire to revert to archaic relationships.

9. Contagious Common Regression and the Communicative Act

The more a human expression partakes of an undifferentiated infantile or archaic nature, the more unconscious is the communicative value which goes out from it. Laughter, crying, yawning, stretching, shivering, may evoke in us the same kind of archaic response. There is something in the observation of an archaic activity that pushes us back into our own pasts, so do music and smells and colors, dancing and artistic creation. The repetition of primary archaic expressions provokes, as it were, a deep resonance

in everybody. The common regressive fantasy leads to more intense communication and direct identification. In a study of the transference function, the writer pointed to this communicative need as an important part of the therapeutic situation (Meerloo, 1952).

The clinical importance of all this is in the elaboration of clinical observation. Not always will one find out to what regressive fantasies the communicative acts of the patient are related; but the moment they are discovered—through a peculiar muscle rhythm during his silent resistance, for example, or through a tendency to assume the fetal position—the field of observation enlarges.

Other phenomena, too, may be throwbacks to archaic responses. For example, the echopraxy in schizophrenics may be compared with the imitative *lattah* symptoms in panicky primitives (Meerloo, 1950). Just as all of us are contagiously affected by yawning, these patients have, in a more extended field, the compulsion to imitate. As a reaction to danger and fear, they lose the differentiative distinction between the outside and the inside world. They feel, as it were, equalized with the therapist, as if living in a big womb. The same phenomenon—described in the literature as reactive depersonalization—is evident in people after escape from tremendous danger (bombing, concentration camp). If one observes them well, it will be seen that they behave like the unborn and that they show many fetal responses.

As the best example, I can give my own memories of such a day; they were repressed and only came back to memory years later. After I escaped from German imprisonment and certain death and, in disguise, had passed the enemy cordon safely, I roamed around in the Paris subway all day long. I hovered in a corner, jumped up sometimes, changed trains, yawned all day, did not eat and, only when night came, did I get out of this archaic hiding spell in Paris' womb. Very symbolically, I went to a barbershop and felt reborn after a shave and a haircut.

Résumé

A survey has been presented of some fetal responses to stimuli and of how one may find them revived in more differentiated, mature behavior. The fetal response may be looked upon as one of the initial adaptive acts which are automatically transmitted to the unconscious. A person's archaic response provokes intensified communication through mutual identification with the pre-birth

situation. As Bolk has explained, man in his biological retardation and fetalization remains dependent on his parents. That is the reason why he sticks to his unconscious identification with his intrauterine existence. It is this common hidden fantasy that makes the communicative element so intensive. Mutual regression leads to the unconscious fantasy of u ification and participation. The significance of these phenomena for an elaboration of clinical observation is emphasized.

162 West 54th Street
New York 19, N. Y.

BIBLIOGRAPHY

Bolk, L.: On the problem of anthropogenesis. Proceedings, Koninklyke Academie Van Wetenschappen. Amsterdam. 1925.

Carmichael, L.: Behavior during fetal life. In: The Encyclopedia of Psychology. Citadel Press. New York. 1951.

Christoffel, H.: Gähnen und Sich-Dehnen. Schw. Med. Wschr., 1951.

——: Skizzen zur Menschlichen Entwicklungs-psychologie. A-Z. Press Verlag. Aarau. 1945.

Ehrenwald, J.: Telepathy and Medical Psychology. Norton. New York. 1948.

Eisenbud, J.: Telepathy and problems of psychoanalysis. Psychoan. Quart., XV, 1946.

——: Analysis of a presumptively telepathic dream. PSYCHIAT. QUART., 22, 1948.

Ferenczi, S.: Begattung und Befruchtung. Psa. Almanach. Wien. 1926.

Fitzherbert, J.: Some further observations on headbumping and allied behavior. J. Ment. Sci., 98, 1952.

Fodor, N.: Telepathic dreams. Am. Imago, III, 1942.

——: New Approaches to Dream Interpretation. Citadel Press. New York. 1951.

Freud, S.: Dreams and telepathy. Int. J. Psychoan., III, 1922.

Groddeck, G.: Das Buch vom Es. J. Psychoan. Verlag. Wien. 1926.

Hooker, D.: The Prenatal Origin of Behavior. University of Kansas Press. 1952.

Meerloo, J. A. M.: Communication and Conversation. International Universities Press. New York. 1952.

——: Telepathy as a form of archaic communication. PSYCHIAT. QUART., 23, 1949.

——: Father time. PSYCHIAT. QUART., 22, 1948.

——: Patterns of Panic. International Universities Press. New York. 1950.

Minkowski, M.: Neurobiologischen Studien am Menschlichen Fötus. Hdbuch Biol. Arbeitsmethoden, Bd. 5, 1928.

Róheim, Géza: Telepathy in a dream. Psychoan. Quart., I, 1932.

THE PROBLEM OF CONVULSIVE DISORDERS IN GERIATRIC PSYCHIATRY*

BY SIDNEY MERLIS, M. D., FRANCIS J. O'NEILL, M. D., AND FREDERICK WEINBERG, M. D.**

This presentation of the correlation of the influence of aging in the individual and the type, etiology and morbidity of his convulsive disorder must be incomplete for two reasons. First, the scope of the subject and the problems involved are such that it is impossible to treat them exhaustively in one presentation. The second and more important reason is that our present knowledge of the pathophysiology of the epileptic syndrome *per se* is inadequate and incomplete in many respects. This is particularly true of the metabolism and the neurophysiological mechanisms involved. These gaps in our knowledge are gradually being filled, but much research remains to be done before a complete understanding of the problem is available.

To all those acquainted with the problem of epilepsy, it is apparent that in the past 30 years there has been a great revolution in the approach to the disease. In the early years of this century the accent was on the description of the overt symptoms of the illness and the socio-economic aspects of epilepsy. Mortality was high, and the complications of the convulsive disorders exacted a heavy toll. Thinking relative to the basic physiology of the disease was considered only in a theoretical sense. While the approach to the problem was obvious to farsighted investigators, they were hampered by the lack of adequate methods of study. With the advent of electro-encephalography and the finer techniques of biochemistry and neurophysiology, epilepsy became more accessible to investigation. Consequently, a great surge of interest developed, with its accent on the physiological understanding of the disorder and the emphasis on newer drugs and treatment methods to control the disease and its complications more adequately. The results of these newer studies have been encouraging. Epileptics are more readily controlled. They are living more normal lives. A substantial decline has been recorded in the mortality associated with epilepsy in the last few years.

*Read before the Section on Mental Hospitals, annual meeting of the American Psychiatric Association, St. Louis, May 7, 1954.

**Stephen Glickman, B. S., assisted with the technical preparation of this investigation.

A review of the recent literature has revealed little regarding the effects of aging on the course of a chronic epileptic disorder. It is difficult to assemble a group of suitable patients to investigate such a problem. Outpatients are unsuitable because of their poor supervision and because of the unreliability of the information received. It is difficult to keep in contact with such individuals over a period of years to assess the changes in their clinical conditions. Because of these factors, institutionalized patients were considered more suitable for investigation. The material obtained from such a group affords the following advantages. (a) The patients are supervised by experienced observers 24 hours a day. (b) Medication is administered regularly and by trained personnel. (c) Careful records are kept regarding the type, frequency and extent of the convulsive disorders. (d) The environment is a carefully controlled situation in which little variation is present.

In the light of the newer advances in the management and understanding of the convulsive disorders, the following questions are posed here.

1. What happens to an epileptic as he grows older?
2. Do the character and frequency of his convulsions change with age?
3. What are the best methods of treatment of epilepsy in the aged?
4. Does the epileptic live as long as individuals in a similar environment without epilepsy?
5. Are the causes of death in aged epileptics today any different from those in non-epileptics in a similar age group?

Materials and Methods

Two hundred fifty epileptics with concomitant psychiatric disorder were studied. All were inpatients of Central Islip (N. Y.) State Hospital between the ages of 55 and 87. There were 134 men and 116 women in this group. Patients were included, only if they had been hospitalized for at least two years before the study began, and only if their histories were complete, and obtained from sources considered sufficiently reliable to make an adequate assessment of the course of the illness through the years.

Many of the patients studied had been hospitalized for the greater part of their adult lives. Those discharged from the hospital were excluded from the study. Cases transferred to other

institutions were carefully followed. One of the writers (S. M.), visited, when possible, the hospitals where these patients had lived. In cases where visits were not feasible, information was obtained from the hospital directors.

Table 1 gives a breakdown of the group by diagnostic categories. The class of "Epilepsy Due to Senility" includes those patients who first developed their convulsive disorder after they had reached the age of 55 and whose subsequent period of hospitalization enabled observation over a period of years. The epilepsies associated with schizophrenia include those patients who suffered from seizures frequently but whose clinical manifestations were so conclusive that they were placed in the group of dementia præcox. The 16 patients in this category must be considered as having two concurrent diseases.

Table 1. Diagnosis of Patients Included in This Study

Diagnosis	No.	Per cent
Epileptic deterioration	110	44.0
Epileptic clouded states	59	23.6
Epileptic excitement	10	4.0
Epilepsy due to senility	23	9.2
Epilepsy due to syphilis	5	2.0
Epilepsy due to alcohol	9	3.6
Epilepsy due to trauma	10	4.0
Epilepsy due to other diseases of the central nervous system	8	3.2
Epilepsy associated with schizophrenia	16	6.4
Total	250	100.0

Table 2 indicates the length of hospitalization of the patients studied. For those with relatively short hospitalizations, there

Table 2. Length of Hospitalization of Patients in This Group

Length of hospitalization in years	No.	Per cent
2-10	142	56.8
11-20	64	25.6
21-30	25	10.0
31-40	14	5.6
41-50	5	2.0
Total	250	100.0

were adequate previous studies and sufficient observations for the writers to assess and evaluate the courses of their illnesses.

Table 3 shows the incidence of the type of seizures of the patients in this group. Some of the minor categories or convulsive types were too small to permit adequate statistical evaluation.

Table 3. Types of Seizures in Patients Included in This Study

Type	No. of patients
Grand mal	209
Grand mal and petit mal	28
Petit mal	5
Petit mal variant	1
Psychomotor	6
Jacksonian	1
Total	250

Table 4 gives the duration in years of seizures in the group studied. The 15 patients in whom the duration of seizures is given as indefinite have adequate records to indicate that all have had seizures for at least five years.

Table 4. Duration of Seizures in Years

No. of years	Patients	
	No.	Per cent
5-10	61	24.4
11-20	54	21.6
21-30	35	14.0
31-40	32	12.8
41-50	25	10.0
51-60	23	9.2
61+	5	2.0
Indefinite	15	6.0
Total	250	100.0

Results and Discussion

While the case material studied is not extensive enough for positive conclusions to be drawn, certain implications and trends are apparent. From the writers' data, the answers to the questions posed in the foregoing are as follows:

What happens to an epileptic as he grows older?

Regardless of the changes in physiology and metabolism associated with the aging process, institutionalized epileptics show a high percentage of improvement as they grow old. (See Table 5.) One hundred sixty-five, or 66 per cent, of all the patients studied showed varying degrees of improvement with age: 63, or 25.2 per cent, of the patients showed no change; and 22, or 8.8 per cent, were definitely worse. The criteria for classification were based on a combination of factors. The frequency of seizures, the extent of the seizures, the type of seizures and the degree of incapacitation as a result of the convulsions were all evaluated.

Table 5. Changes in Clinical Condition with Advancing Age

Patients	No.	Per cent
Better	165	66.0
No change	63	25.2
Worse	22	8.8
Total	250	100.0

In an attempt to correlate further the changes in clinical condition with the development of senility, a breakdown of the onset of seizures according to age (Table 6) and according to etiology was made (Table 7). While the number of cases in each group is not enough to be statistically significant some interesting trends are apparent. When convulsions first appear during puberty or the second decade of life, a greater relative percentage of patients show no improvement with advancing age and tend to continue having seizures as frequently and extensively as when they originally began. Similar findings are noted in the 41-to-50-year age group; individuals developing seizures in the presenium show less relative tendency toward improvement. Actually, a high percentage of them grow worse. Those patients in the oldest age groups who initially develop seizures very late in life always show less tendency toward improvement. In this latter group, one might assume that, for the most part, the etiology and provocative factor in the convulsive phenomena are on a vascular basis, and one can see that this provocative factor gets worse instead of better with advancing years.

Table 6. Relationship of Age at First Convulsion to Change in Clinical Condition with Advancing Age

Age at first convulsion	Clinical condition with age		
	Better	No change	Worse
0-10	19	5	1
11-20	25	18	2
21-30	26	6	2
31-40	34	1	1
41-50	29	10	7
51-60	17	3	2
Unknown	5	9	1
61+	10	11	6
Total	165 (66%)	63 (25.2%)	22 (8.8%)

Table 7. Relation of Etiology to Changes in Epileptic Disorders with Age

Etiology	Better	No change	Worse	Total
Intracranial etiology pathology				
Inflammatory conditions	13	7	..	20
Trauma	39	9	2	50
Vascular disease	8	19	5	32
Neoplasm	..	2	..	2
General somatic diseases				
Metabolic	2	..	..	2
Respiratory	6	..	1	7
Cardiovascular	16	5	2	23
Gastro-intestinal	2	..	..	2
Renal	2	..	..	2
Endocrine	23	5	5	33
Blood dyscrasias	..	1	..	1
Intoxications	43	6	5	54
Psychogenic	5	2	..	7
Unknown	6	7	2	15
Total	165	63	22	250

There should be a word about those in the 11-to-20 and the 41-to-50-year age groups. To determine what factors might be operating in these cases a further breakdown of the data was made. It was assumed that these two particular decades in an individual's life are associated closely with prominent changes in endocrine function—puberty, with the onset of menses in the early age group and the menopause and involutional period in the latter group. Of the total patients in the 11-to-20-year age group, adequate endocrine data could be found on 21 women.

In 11 patients, a definite temporal relationship was found to exist between the onset and frequency of the seizures and the onset of puberty and menses. In this latter group, six patients showed a complete cessation of seizures at the menopause, and two showed a marked decrease in the frequency and severity of convulsions.

Of the 46 patients in the 41-to-50-year age group, only 12 of the 19 women had records indicating an association between the initial convulsive phenomena and the involutional state.

Six patients showed seizures only during the period of the involutional phase and later showed no further epileptic activity; three patients continued to show increasingly severe epileptic activity with progressive aging. It would seem that in some patients in this series endocrine function played a definite role in the causation and continuation of the epileptic disorder.

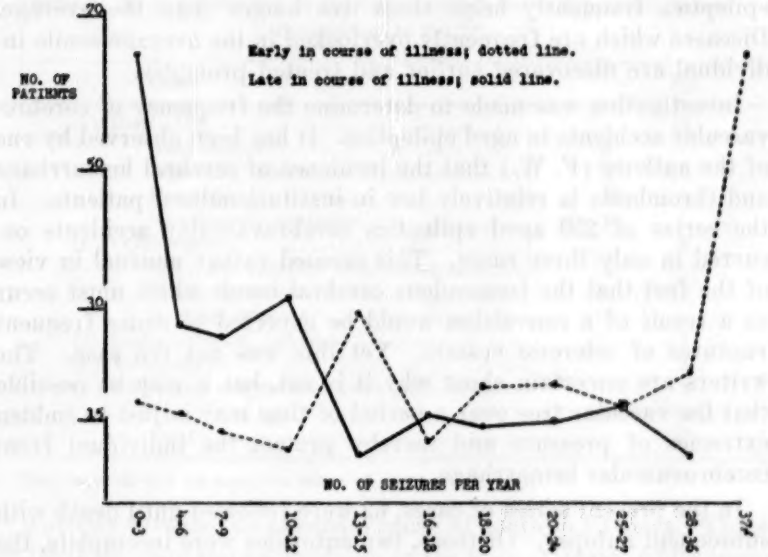
Do the character and frequency of the epileptic's convulsions change with age?

In those patients who improve with age, there appears to be little change in the type of convulsions. Those with grand mal convulsions continue to have the same major seizures all of their lives. What does change, however, is the frequency of the seizures. With age there is a tendency for patients to have fewer convulsions. The figure indicates graphically the incidence of convulsive seizures early and late in the course of the disease. There is a gradual tapering off of the seizure incidence with age, so that seizure frequency in senescence is less than at any time during life.

It is of interest to note that patients in the senium who show a decreased frequency of seizures often will develop an exacerbation of the number and severity of convulsions as they progressively deteriorate shortly before death. It is possible that changes caused by impending death in the homeostatic balance cause a disruption of the delicate metabolic balance and that this is indicated by a resurgence of the severe epileptic state.

What are the best methods of treatment of epilepsy in the aged?

In the writers' experience, most epileptics in advanced age respond best to the barbiturates. Phenobarbital has been found of particular value. The anticonvulsant drugs, such as dilantin and related compounds, are of help only in those cases who show a progressive type of convulsive disorder. Most of the patients in this series seemed adequately controlled by sedatives, however, with-



The frequency of seizures in the same patients compared early and late in the course of their convulsive disorder

out the use of other specific medication. Recently, the writers have been using a newer type of anticonvulsant which has shown itself to be of value in the aged epileptics. Hibicon (Lederle) has proved to be an unusual anticonvulsive, in that it has some very desirable side effects, particularly in the aged. In doses of one to three grams daily, hibicon has been found to produce marked improvement in their general behavior, and to create a feeling of wellbeing in addition to acting as an effective anticonvulsant. Investigation of this and related compounds is continuing.

The last two questions asked will be answered together.

Does an epileptic live as long as individuals in a similar environment without epilepsy? Are the causes of death in aged epileptics different from those of similar-aged non-epileptics?

As a result of better understanding of epilepsy and improvements in the management of this condition it appears that the convulsive disorders are, for the most part, no longer a serious threat to longevity. It is apparent from the present series that hospitalized epileptics can and do live as long as non-epileptic patients. The increased attention and medical care received by hospitalized

epileptics frequently helps them live longer than the average. Diseases which are frequently overlooked in the average senile individual are discovered earlier and treated promptly.

Investigation was made to determine the frequency of cerebrovascular accidents in aged epileptics. It has been observed by one of the authors (F. W.) that the incidence of cerebral hemorrhage and thrombosis is relatively low in institutionalized patients. In the series of 250 aged epileptics cerebrovascular accidents occurred in only three cases. This seemed rather unusual in view of the fact that the tremendous cerebral insult which must occur as a result of a convulsion would be expected to cause frequent ruptures of sclerotic vessels. Yet this was not the case. The writers are uncertain about why it is not, but it may be possible that the vascular tree over a period of time may adjust to sudden extremes of pressure and thereby protect the individual from cerebrovascular hemorrhage.

In the present series of cases, 62 were followed until death with subsequent autopsy. Of these, two autopsies were incomplete, the heads not being examined. One of these two patients died of intestinal tuberculosis and the other of a ruptured abdominal aneurysm. The data on the remaining 60 fall into two categories:

(a) Those with appreciable cerebral pathology (Table 8), and

(b) Those with no appreciable cerebral pathology (Table 9).

Table 8. Breakdown of Autopsies Showing Cerebral Pathology

Cause	No.
(a) Brain tumor, primary and metastatic	4
(b) Brain abscess due to otitis media	1
(c) Central nervous system syphilis	3
(d) Subdural hemorrhage	3
(e) Cerebral vascular sclerosis with cerebral infarction	12
(f) Old cerebral trauma	8
(g) Fresh trauma	1
(h) Chronic leptomeningitis with fibrosis (non-luetic)	1
Total	33

Of the 33 cases showing cerebral pathology, 12, or more than one-third, showed cerebral vascular sclerosis with its sequelae. Eight, or approximately one-fourth, showed old cerebral traumata. Death was infrequently due to the cerebral pathology.

Table 9. Autopsies Showing No Cerebral Pathology But with Systemic Disease Contributing to Death*

Cause		No.
(a) Respiratory		11
Lung abscess	2	
Pulmonary tuberculosis	3	
Pneumonia	5	
Bronchogenic carcinoma	1	
(b) Cardiovascular		3
Rheumatic valvulitis with endocarditis	1	
Calcific aortic stenosis	1	
Coronary sclerosis	1	
(c) Gastro-intestinal (volvulus)		1
(d) Erysipelas		1
(e) Embryonal carcinoma of testis with metastases		1
Total		17

*Ten cases showed no adequate cause of death at autopsy.

Autopsy revealed no adequate cause of death in 10 cases. Three of these patients were convulsing at the time of death, while seven deaths were either unexpected or unobserved. The only findings in these 10 cases were pulmonary and/or vascular congestion, cerebral congestion and edema.

In following this series of cases through the years, it is apparent that there is a progressive increase in the ages of these patients at death. The last of the unexpected deaths showing no adequate cause occurred at this hospital in March of 1938. It is interesting to note that almost all of the deaths in recent years have been caused by the degenerative diseases of the aged, and not by epilepsy or its complications. In previous years, before use of the newer anticonvulsant drugs and antibiotics, a high toll was taken among the younger epileptics. Today such is not the case. It is the writers' opinion that in the light of our present knowledge and therapy, epilepsy *per se* is not a valid cause for death. Epilepsy is merely a symptom complex, a special type of nervous system reaction to stimuli, not a disease entity. While it is true that in the past, and even up to the present time, many epileptics have died who at autopsy showed no specific cause of death, increased knowledge in laboratory and diagnostic techniques will eventually reveal the mechanism and the cause of death in such cases.

Conclusions

Two hundred fifty institutional epileptics with concomitant psychiatric disorders were studied to correlate the effects of aging on the morbidity and prognosis of the convulsive disorder. Evidence is presented to indicate that the majority of patients with convulsive disorders tend to improve with age. Data are presented to show that in the light of our present knowledge the problem of epilepsy in our geriatric population can be managed adequately and that aged epileptic patients can expect to live normal life spans in spite of their convulsive disorders.

Central Islip State Hospital
Central Islip, N. Y.
and
New York University-Bellevue Post-Graduate Medical School
New York, N. Y.

THE ELECTRO-ENCEPHALOGRAM IN HYPNOTIC AGE REGRESSION

BY E. JAMES McCRANIE, M. D., HAROLD B. CRASILNECK, Ph.D., AND HENRY R. TETER

Introduction

One of the most fascinating and most controversial phenomena in the field of hypnosis is that of age regression. Some workers maintain that age regression is a kind of almost-conscious acting out by the subject in order to please the hypnotist. Other authors are of the opinion that in hypnotic age regression there is a genuine reproduction of an earlier period of life.[1] Some even go as far as to postulate that the regression in behavior is associated with changes in cerebral physiology. According to Gidro-Frank and Bowersbuch,[2] the general behavior and the alteration of the plantar response in hynotized subjects who have been regressed to an infantile level furnish proof that significant changes have occurred in their physiology. These authors demonstrated that alteration in the plantar response is accompanied by changes in peripheral chronaxie, which they believe is under the influence of higher centers possibly located in the mesencephalon. It is also known that lesions of Brodmann's area 4 of the motor cortex produce Babinski's sign in the chimpanzee and in man and that simultaneous bilateral ablation of areas 4 and 6 brings about infantile motor behavior in lower primates. By a process of analogy, Gidro-Frank and Bowersbuch[2] reason from these facts that in hypnotic age regression to an infantile level, there is a functional ablation of certain cortical areas. They believe that unidentified neurophysiological mechanisms are involved in this process. This line of reasoning strongly suggests, therefore, that age regression in hypnosis is not only a psychological phenomenon but a neurophysiological one as well.

The purpose of the present work was to determine by the use of the electro-encephalographic method of investigating brain physiology if there are neurophysiological changes in hypnotic age regression. Since there are definite and easily recognizable differences in the electro-encephalograms of infants and adults, this method should be a particularly apt way to determine if there is neurophysiological regression accompanying hypnotic regression of adults to infancy.

Procedure

The electro-encephalograms for this study were recorded on the Grass Electro-encephalograph, model IIIC. The examination was made with the patient resting on a comfortable bed. A routine eight-lead study was made on each patient, with electrode placements on the frontal, temporal, posterior fronto-anterior parietal, and the parieto-occipital regions. Routine bi-polar recordings were made on all subjects, using the following selections: frontal to posterior fronto-anterior parietal, posterior fronto-anterior parietal to temporal, temporal to parieto-anterior occipital, and parieto-anterior occipital to posterior fronto-anterior parietal. This was followed by monopolar recordings and, finally, by hyper-ventilation for three minutes, using the bi-polar selection. The patients were allowed three to five minutes after hyper-ventilation to return to their basic patterns before being subjected to hypnosis. All recordings during hypnosis were made on bi-polar selections as given in the foregoing. Serial recordings were made at various age levels during regression, and constant recordings were made during "infancy." Short recordings were made after regression, and after being awakened from hypnosis.

The subjects of this experiment were 10 student volunteers ranging in age from 18 to 33. There were six women and four men in the group. Each subject had spent from four to 12 hours in training in hypnosis. In each case, the subject was told only that the experiment concerned hypnosis and the electro-encephalogram, and that hypnotic practice sessions would be necessary to obtain the required depth of hypnosis. No other information concerning the experiment was given, other than explaining the general purpose of the electro-encephalogram to the less well-informed subjects. In each case the signs manifested in the various depths of hypnosis, as described by Wolberg,[3] were observed in all the subjects. All of the subjects demonstrated somnambulistic manifestations such as: complete post-hypnotic amnesia, opening the eyes without affecting the trance, production of both positive and negative hallucinations, and the enactment of bizarre post-hypnotic suggestions.

After the somnambulistic stage was attained, age regression was suggested, using the instructions of Wolberg[3] as follows: "Listen carefully to what I say to you. Nothing is ever forgotten and it is possible for you to recall memories in your past life. As you lie there deeply asleep you will feel yourself beginning to go back

in time, and you may be aware of the sensation that your body is beginning to get smaller and smaller. You feel small all over and you are no longer (depending upon the age of the subject) 19 years but you are now 18, 17, 16, etc." The subjects were "regressed" year by year until they were five years old. Their developmental level was then evaluated by asking such questions as "What is the duodenum?" "What is psychiatry?" and "How much is 3 times 33?" In addition, their memory for specific events of that period, was tested. At the same time, they were encouraged to relive the affective accompaniments of the memories. Continued age regression was suggested until the subjects were regressed to one month. They were then tested for the Babinski sign and the sucking reflex. After this, they were slowly returned to their correct chronological ages and then were again asked the questions previously mentioned. Post-hypnotic amnesia was then suggested for the entire experiment and the patients were awakened.

Results

All 10 of the subjects manifested typical phenomena of age regression. The intellectual regression, as measured by ability to answer questions of information, was observed to be roughly comparable to the regressed age. The subjects were able to remember with vivid details events of their childhood while they were regressed to the time during which the events took place. For example, they could give detailed descriptions of birthday parties. At the age of two, definite speech changes were noted in all the subjects, such as lisping and "baby talk." At five months, none of the subjects was able to talk at all. At this age level, and below, strong sucking activity occurred, especially when an artificial nipple was placed in the mouth. When the plantar reflex was tested, three of the subjects exhibited the Babinski toe sign at this age, while no response at all was elicited in the others. After the subjects were returned to their correct chronological ages, they were no longer able to recall in detail the childhood events which they, while regressed, had been able to describe so vividly. Likewise the plantar response was now found to be normal plantar flexion.

The electro-encephalograms of all the subjects were within normal limits. There were no significant changes in the electro-encephalograms under hypnosis or at any stage of hypnotic age regression.

Conclusions and Discussion

In these subjects no changes in cerebral physiology under hypnotic age regression were detected by the electro-encephalographic method. Consequently, the hypothesis of Gidro-Frank and Bowersbuch,[2] that in hypnotic age regression to an infantile level there is functional ablation of certain cortical areas in which neurophysiological mechanisms are involved, is not substantiated by these experiments.

It is not felt, however, that these experiments are by any means conclusive in ruling out the possibility of alterations of cerebral physiology in hypnotic age regression. It is possible that there are changes that are not detected by the electro-encephalographic method. Also, it is possible that the regression in the present subjects was not completely genuine. Even though the subjects did seem to be reliving previous episodes of their early lives—which Erickson and Kubie[4] describe as necessary for genuine regression—it might be that a more complete or more prolonged hypnotic regression might be accompanied by electro-encephalographic regression.

Summary

The hypothesis that there might be changes in cerebral physiology accompanying the psychological phenomena of hypnotic age regression was tested by comparing the electro-encephalograms of 10 normal subjects before and during regression. No alterations of cerebral physiology during hypnotic age regression were discovered.

Department of Psychiatry, Southwestern Medical School
University of Texas
2211 Oak Lawn Avenue
Dallas 19, Texas

References

1. LeCron, Leslie M.: A study of age regression under hypnosis. In: Experimental Hypnosis. Macmillan. New York. 1952.
2. Gidro-Frank, L., and Bowersbuch, M. K.: A study of the plantar responses in hypnotic age regression. J. N. M. D., 107:443, 1948.
3. Wolberg, L. R.: Medical Hypnosis. Grune & Stratton. New York. 1948.
4. Erickson, M. H., and Kubie, L. S.: The successful treatment of a case of acute hysterical depression by a return under hypnosis to a critical phase of childhood. Psychoan. Quart., 10:592, 1941.

PERCEPTUAL CAPACITY, FUNCTIONS OF THE CORPUS STRIATUM AND SCHIZOPHRENIA*

BY FRED A. METTLER

CONTENTS

INTRODUCTION

The purpose of the present communication is to advance the hypothesis that the primary psychologic abnormality underlying the schizophrenic process is disordered perception and that the substrate of such disorder is a pre-perceptual difficulty caused by dysfunction of the striatum.** This hypothesis has served as a working background for certain experimental designs of laboratory inquiry during the past decade and is an outgrowth of work (Mettler and Mettler, 1940, Mettler and Mettler, 1942) begun some 15 years ago in connection with the study of the physiology of the basal ganglia.

*A résumé of the author's point of view, referred to in the "Second Conference on the Convergence of Viewpoints on the Causation of Mental Disease" held on June 24-25, 1954 at The New York Academy of Medicine under the auspices of its Committee on Public Health. (In press.)

**Dr. Nathan Kline has pointed out that Bleuler, from whom we derive most of our classifications, categorically stated that there is no primary perceptual disorder in schizophrenia. On the other hand the position is taken here, not only that such disorders exist, but that disordered perception is not the consequence of such abnormalities as emotional upset or feelings of unreality, but the cause of these.

Perceptual Capacity

Nature of Perception

For the purpose of the present discussion perception is defined as the recognition of external objects through the senses. While not sharply distinguishable from cognition and conception, it is a more proximal phenomenon which involves becoming aware, not merely of the existence of, but also of something of the nature of, a stimulus situation. It involves three successive processes, the first of which is a physiological phenomenon without direct psychologic equivalent or concomitant, while the two succeeding processes do have definite psychological accompaniments. These processes are conduction, sensation, and coupling (of sensation with meaning).

For the occurrence of sensation, there must exist a condition of set or attention (in a behavioral sense) and this can only occur when and where there is freedom of shift. Set and shift compose, therefore, a condition prerequisite for perception. This prerequisite condition may be called pre-perception. Conduction and pre-perception are essentially unconscious processes, though attention and shift may occur as conscious phenomena. Either set or attention may precede its fellow. Repetitive shift produces sensory scanning which acts as a monitoring process of events in progress. Without appropriate set or attention, afferent stimuli are not immediately regarded at a high level of consciousness though they may be received and stored for later interaction with other traces such as percepts and concepts.

There are evidently great individual differences among even normal individuals with regard to the level of attention available and with regard to freedom of shift. In some persons the achievement of any notable degree of intensity of attention seems to be seriously impaired in conditions of ill health or fatigue. In others freedom of shift may be hampered (stimulus-binding) or shift may become abnormally rapid and diffuse. Certainly the vividness of sensation and the facility of associating sensation with meaning vary greatly from person to person. Each of these processes may be considered as independent variables, marked abnormalities of which will be reflected in the abnormal development of psychic existence.

Perceptual Impairment in Schizoid States

The possibility that schizoid conditions are a natural outgrowth of perceptual disorders is worth examination. That perceptual disorders exist in schizophrenics will not be denied, but many readers will have reservations about admitting that such disturbances are of a primary nature. The basic data in support of the belief that perceptual processes are disordered in schizophrenia are derived, for the most part, from the productions of the patients and to a lesser extent from the results of psychologic tests. Throughout the history of psychiatry, the complaints, or rather productions, of psychotic patients in all cultures have been of such a nature as to accord with the interpretation that many of these productions involve disordered perception. Traditionally- and dynamically-trained psychiatrists are in essential agreement in interpreting a great variety of simple and complex phenomena as having such an origin, even though they may differ as to how the perceptual disorder arises. (For example, disordered perception may be considered secondary to the "loosening of associative bonds.") For the analytically-trained theorist, schizophrenia involves ego disintegration, one of the first signs of which is altered perception. Whatever interpretation is accorded, psychiatrists view with grave concern any report by a patient of the inability to perceive phenomena with clarity and in "normal" relationships with each other, and this alarm is immediately reflected by guarding the prognosis.

As characteristics of the early (chronologically speaking) perceptual difficulties of the schizophrenic, may be cited their apparent simplicity, their sudden onset, their often periodic nature, and aspects of similarity to conditions encountered in febrile and toxic states as well as in some neurological diseases which may be caused by relatively peripheral lesions of the neuraxis. It may not be out of place to inquire as to whether such beginning disturbances are truly perceptual, or whether they in fact partake of the more complex nature of what may be called conceptual difficulties. In order to make progress on this point, it may be readily admitted that while concepts are secondary formations, conception cannot be absolutely demarcated from perceptual activity and is essentially a continuation and elaboration of it, as a result of the grouping or comparing of percepts (generalization and abstraction). While

perceptual activity may occur without any appreciable degree of conceptual activity, the reverse is not true. Thus conceptual abnormalities can continue indefinitely with little or no perceptual distortion (though it is certainly true that perception is conditioned by the conceptual frame of reference in which it occurs). On the other hand, perceptual dysfunction cannot long endure without very serious conceptual disintegration. From the writer's present point of view, it seems profitable, not only to regard the development of conceptions as a process dependent upon the accurate development of percepts, and thus vulnerable to any weakness in the chain of events leading to their formation, but also to regard the process as suffering from the intrinsic fallibility of complexity—in this case the vulnerability of multineuronal circuit arrangement.

In view of the enormous psychologic literature on perception, comments such as the foregoing, might appear superfluous and naïve except for the fact that, as Arber (1954) points out, the interest of any period is a sign of the general intellectual focus of that period. At the present time concern with perception is considered rather *démodé*. Since perceptual disturbances are not infrequently cast in the role of effects rather than integral, albeit secondary, causes of many of the changes studied by dynamicists, a large amount of available information may escape potentially profitable re-examination.

Although many interesting opportunities present themselves for scrutiny in the line of thought being pursued here, the circumstance which has attracted the writer's attention is the fact that whereas removal of granular frontal cortex exerts relatively little effect upon a gyrencephalic organism's ability to relate itself to its environment, damage of the immediately subjacent gray matter produces a striking degradation in this capacity—a degradation which has much in common with the vacuity of hebephrenia. The form of disorder which is of particular concern here is characterized by a loss of mobility in the shift of attention from one source of sensory input to another. There is, consequently, a breakdown in the ability to make those monitoring comparisons in which a person is always engaged and which are necessary to maintain contact with, and make an adequate interpretation of, the source of exogenous stimuli, as well as to reinforce memory and sustain an adequate level of intellectuality. Conceptual precision requires a constant

process of perceptual monitoring not merely in areas such as estimates of measurement but even in the maintenance of speech habits. In this monitoring process the manifold, small alterations occur by which the individual is kept in adjustment and harmony with a gradually shifting environment. It should be apparent in speaking of disorders of perception that the concern here is not with complete or partial failure of a particular afferent system—such as amaurosis, scotoma or diplopia. As pointed out in the foregoing, the pre-perceptual disorder that is pertinent here is one which is common to all modalities, though it may be perceived more urgently at various times in relation to one or another modality—depending, usually, upon the modality in which the principal source of stimulation occurs.

Prognosis in Schizophrenia

The writer believes that he and his associates have been able to demonstrate that populations commonly diagnosed as schizophrenic in mental institutions can be analyzed into two large (and some smaller) groups with essentially different prognoses. Thus, during the course of several "psychosurgical" studies (Mettler, 1949a; Mettler, 1952; and Mettler, Crandell, Wittenborn, Litten, Feiring and Carpenter, 1954), it gradually became apparent that the degree of therapeutic "success," as measured by relatively enduring lengths of extramural existence, depended less upon the nature or fact of operation than upon the patients' histories of institutionalization. In order to have a relative rating of such histories, an "occlusive index" was developed (Mettler, 1952, p. 317) which is the ratio between the time spent in the hospital and the number of interruptions in that period. Certain statistical difficulties in the "occlusive index" were corrected by the evolution of a "mobility index" from it (Crandell, Zubin, Mettler and Logan, 1954). Both of these indices are interesting and valuable devices which can give reliable prognostic information for large patient samples with the expenditure of a relatively slight amount of energy on the part of nonprofessional personnel. Further, it is probable that they can be profitably employed on data pertaining to patients in any hospital and for any period, providing even the most rudimentary records have been kept.

These indices depend for their accuracy upon the fact that psychotic persons and the environment in which they exist tend to

continue to behave in a consistent manner (and there seems to be little evidence that any of the therapies thus far advanced have any very great influence upon such behavior). From the present point of view, the interesting aspect of these indices is that they disclose that the expectation expressed by them is already detectable at a very early period of hospitalization and that patients in a hospital do not form a great continuum, ranging from one extreme of the range of the index to the other, but lie, for the most part, in two great clusters, one of which (with a low degree of mobility) has a very poor prognosis, while the other (which exhibits an intermediate degree of mobility) has a good prognosis. (A very high degree of mobility is not associated with good prognosis.) Since the indices mentioned are of such a nature that environmental variables as well as the patients' own stability might influence outcome, it is a matter of considerable interest to observe that the two large clusters noted are not primarily related to variations in the environmental situation but are conditioned by circumstances bound up in the patients' own conditions.

This situation has been previously analyzed (Mettler, 1952), and it has been pointed out that the psychiatrist's prognosis is the most reliable indicator available for expectation on individual patients and that, in large part, this is dependent upon the presence or absence of what has been variously termed deterioration or regression, which in turn involves the loss or preservation of affect. In the writer's own studies it has been found that only half the cases for which his psychiatric colleagues have advanced good prognoses (cases with detectable preservation of the capacity to display affect) are discharged from the hospital (Mettler, 1952). At one time, the writer was inclined to interpret such a finding as due to a poor family situation operating against the discharge of persons who did in fact possess good affective capacities. Unfortunately, further examination of cases of this type has failed to disclose anything in the environmental situation of many such individuals which could be interpreted as constituting such a variety of occlusion. On the other hand Zubin, Windle and Hamwi (1952), employing the material available from the first Columbia-Greystone Project (Columbia-Greystone Associates, 1949), have brought forward data to indicate that those patients who leave the hospital have poorer conceptual capacities than those who remain behind.

This apparent paradox is susceptible of interpretation in a va-

riety of ways. It is consonant with the observation that persons with high levels of intellectual performance have poorer prognoses than those with lower, and might be interpreted in the same way, notably that people with better capacities resist illness better and breakdowns in them indicate a correspondingly more serious degree of disease. Zubin and his associates have however pointed out that, coupled with conceptual clarity, in cases with good prognosis there is a trend toward perceptual confusion. In personal discussions Zubin has pointed out:

"A distinction must be drawn between old, ingrained conceptual capacities that are no longer dependent on perceptual activity directly, and relatively new conceptual activity which is directly dependent on present perceptual functioning. An example of the old ingrained conceptual functioning is knowledge of word meaning —an example of the newer type of conceptual function which is directly dependent on immediate perception is reading a map.

"A patient may be good in old conceptual functioning, but poor in immediate perception. This is the type of patient, who, according to our findings, has a poor prognosis. On the other hand, if a patient has poor conceptual functioning in the old ingrained material, but has good immediate perceptual capacities, his prognosis is good. I wish we had some good tests of conceptual capacity which depended directly on immediate perception—but we had only a few of those, and they did not yield any prognostic indications."

From the data of Zubin, et al., there is then a suggestion that perceptual and conceptual capacities (of the type described) may vary in different directions in schizophrenic patients. That perceptual and conceptual capacities may vary independently in the spheres of vestibular function and autokinesis has been previously demonstrated by Kline (1949), Kline, Shepperd, Kline and Holsopple (1949), and Kline (1952) in the same group of patients studied by Zubin, et al.

One wonders whether there is not some definite reason why the psychiatrists' prognostic statistics, based as they are upon the degree of preservation of affect, are generally too high. Is it possible that loss of affect is a sequel of perceptual disturbances and that affective display is a less sensitive indicator than measures of conceptual and perceptual capacity might be?

Nature of Striatal Dysfunction

The argument of the present section of this paper is that dysfunction of the striatum* produces a form of physiologic deficit which includes, as one of its principal features, perceptual disorder. Similarities between the type of behavior displayed by animals deprived of striatum and patients with schizophrenia suggest the possibility that schizophrenic individuals may suffer from striatal dysfunction. In any event it is felt that the experimental production of an organism the behavior of which resembles, howsoever superficially, that displayed by mentally diseased persons is a circumstance worthy of recountal and further investigation.

The striatum forms a significant part of the bulk of the mammalian brain and has even greater quantitative significance in lower forms. Since it lies between the diencephalon and cerebral cortex in those animals which have little of the latter, it is the region which has generally been removed in the researches of those experimental psychologists who have worked with inframammalian animals. Removal of the cerebral hemispheres in pigeons produces cyclical activity in which inertia and hyperkinesia due to visceral stimulation alternate. The animal reacts only to those visual stimuli which arise from its immediate vicinity, and complex patterns of behavior are greatly disturbed. Much detailed information has been accumulated by the experimental psychologists but it is difficult to transfer this to work on higher forms. This is partly because relatively little is known about the latter but more especially because the anatomical design of many of the psychologic experiments, and the surgical skill with which the operative work has been done, have left something to be desired.

A significant advance of the last 20 years has been made in the demonstration that much which, in the realm of "psychic" adjustments, has been considered due to cortical activity actually depends upon the function of subcortical mechanisms. It has, of course, long been known that organisms with very little cortex are able to

*It is advisable to clarify the terminology used here. The term striatum is employed to comprehend two nuclear masses (the caudate nucleus and putamen) which although anatomically distinct throughout much of their extent are identical in structure, homologous in their connections and separated only by the accident of development. The term striatum is not to be confused with the corpus striatum which designates, in addition to the caudate nucleus and putamen, the globus pallidus, a structurally dissimilar nucleus and one also differing from the striatum by virtue of possessing different connections.

pursue highly integrated patterns of activity and are in excellent contact with their environments (albeit their reactions may show a surprising degree of stereotypy—such as occurs in birds). Nevertheless, such knowledge was not brought to bear upon problems of human or even mammalian behavior. In early work with carnivores, indifferent surgical accomplishments, and preconceptions drawn from clinical misinterpretations, prevented a clear recognition of the fact that cortical removal does not reduce the organism to a condition in which contact with its environment is destroyed. Some 20 years ago, the writer and associates demonstrated (Culler and Mettler, 1934a, 1934b; Mettler, 1935a, 1935b; Mettler, Mettler and Culler, 1935; Girden, Mettler, Finch and Culler, 1936) that Pavlov was in error in assuming that decorticated carnivores could not establish conditioned reflexes; and it was shown that—while differentiation is lost, and automaticity increased, under such circumstances—modifiable behavior in response to alterations in the environment is still possible.

On the other hand, it was found that this valuable function of modification to fit environmental change was lost when the striatum was invaded via the cortex (Mettler and Mettler, 1942). The latter finding was the first demonstration, as far as the writer is aware, that the over-all ability of an organism to relate itself to its environment depends upon the integrity of a subcortical mechanism. It has previously been pointed out (Mettler, 1949, p. 480 et seq.) that much of the traditional material attributing this type of function to the activity of the frontal cerebral cortex will not withstand close scrutiny, and the writer believes that the psychosurgical experiences of the past decade confirm this opinion. (It is his belief that in those exceptional cases in which severe degradation has occurred, either previous organic pathology has existed, or structures deeper than the cortex and its fibers, have been damaged.) In the absence of the cortex then, the organism shows a complete loss of awareness to formed and complex stimuli of all those sensory modalities of which the cortical terminations have been removed. Moreover, the motor pattern is degraded into a diffuse variety of stereotyped activity, difficult to activate and stop, but the organism still responds to crude (mixed), intense stimuli and still modifies its behavior. The performance of such an organism is, of course, severely degraded; but if the sensory influx is not tampered with, and only frontal cortex is removed, animals are able to do a great

deal more. Indeed, as Harlow (1952) has recently summed it up, there is relatively little observable interference, even in the area of discriminative learning.

In contrast to this, the animal in which a striatal defect is added to a frontal removal displays a profoundly vacuous appearance and several rather specific types of additional defects (Mettler and Mettler, 1942). In the field of vision there is a disregard of distant objects, a failure to react in an adaptive manner to situations and animals and persons in the field of vision, a tendency to push forward into objects and to fall down declivities (probably because of disregard of depth), as well as a paucity in eye movements. On the other hand the organism tends to follow with great fidelity moving objects placed directly in front of the eyes (much as chicks and other young animals may do). There is also disregard of auditory and labyrinthine stimuli (Mettler and Mettler, 1940a). Such organisms also display cursive and essential hyperkinesis, pushing (obstinate progression), leaping (Mettler and Mettler, 1941a) and resistance to superimposed postures and passive movement.

Bilaterally, simultaneously, striatally-deprived animals often die soon after deprivation. The cause of such deaths is not clearly understood. Disturbances in carbohydrate metabolism (Heath, Freedman and Mettler, 1947) and electrolyte balance (Weber, 1952, and Hogan, 1952) have variously been implicated, but the reason for death has not been established and such metabolic disturbances as may occur do not appear on the face of things to be responsible for the perceptual difficulties. There has also been a certain amount of discussion as to the precise location of the lesion which causes whatever metabolic disturbances may occur, but there does not appear to be any disagreement that the striatal lesion is responsible for disorientation. In that connection, it must be pointed out that attempts to produce the completely developed picture of striatal defect by stereotaxic lesions alone have not been successful. There are two possible explanations for such a phenomenon. In the first place, it may be that it is not possible to destroy enough striatal tissue by such techniques so as to exceed the factor of physiologic safety of the structure. On the other hand it may be that cortical deprivation is a necessary, though not the provocative, part of the so-called striatal syndrome.

Probable Physiologic Significance of the Striatum

The picture outlined in the foregoing is susceptible of explanation if one assumes that the striatally-deprived organism has come under primary proprioceptive domination and that its capacity for sensory shift has been impaired. From an evolutionary point of view, the proprioceptive system is the oldest of the great sensory systems to assume integrative importance at the thalamostriatal level. In low forms (from cyclostoms through selachians, ganoids, teleosts and even amphibia), the striatum is primarily related to the olfactory inflow, the mesencephalon is the principal integrating area and the lemniscus ends in it as the bulbotectal tract. In amphibia, the midbrain begins to lose some of its importance in this respect, and, in mammals, the bulbotectal tract becomes a true lemniscus, ending in the nucleus ventralis thalami (which is not ventrally but laterally located); and integrative functions have become shifted to more rostral levels. Such a sequence of events presupposes that the mechanism for shifting attention from one to another sensory modality, at high levels, must be present in the plan of the nervous system, which is accessible to several sources of sensory inflow. The striatum is already at hand at that time. It is interesting to observe that the cerebral cortex, which is a later development, arises from a common primordium with the striatum. In mammals, the proprioceptive system is connected, "in parallel" as it were, at segmental, pontocerebellar, diencephalic and cortical levels (the mesencephalic integrative mechanism of lower forms having been lost); and successive deprivation, from above downward, leaves a functionally inferior but still self-adequate and complete system. From a phylogenetic point of view, the striatum and the cerebral cortex are successive superimpositions upon thalamopallidal circuits.

The effects of striatal stimulation (Mettler, Ades, Lipman and Culler, 1939; Mettler and Mettler, 1940b; Mettler, 1940; Mettler and Mettler, 1941b; 1941c) are in accordance with the view that the striatum frees the organism from proprioceptive dominance. Specifically, striatal stimulation inhibits "spontaneous" movement in progress and also inhibits cortically-induced activity. Such inhibition has qualities which are specific. Thus, a movement in progress does not immediately collapse and the animal does not pass immediately into an entirely flaccid condition. Rather the movement ceases in midposture, and the limbs slowly descend, still re-

taining an appreciable degree of "tone." Moreover, the organism soon "escapes" from such inhibitions, which are much more effective upon "spontaneous" than upon cortically-induced movement. The attitude of the striatally-stimulated organism is one of attention, of awaiting a stimulus-cue.* From the electrophysiologic point of view, the striatum can be found to project in two primary directions—into the cortex and into the pallidum. The cortical projection is to the frontal region—specifically, in the primate, to Brodmann's area 10 (Mettler, Hovde and Grundfest, 1952; Hovde and Mettler, 1953 and 1954), a connection which has been anatomically verified (Mettler, 1943, Harman, Hovde and Mettler, 1954), and to the pallidum. Stimulation of this region in the human produces speech arrest or inhibition (Penfield and Rasmussen, 1950; Penfield and Jasper, 1954), a phenomenon which is also encountered after stimulation elsewhere in the cortex. It is interesting to observe that striatal stimulation has the effect of obliterating cortical alpha rhythm, whereas hallucinatory activity does not.

In the foregoing theoretical construction, the pallidum has been cast in the role of a proprioceptively-activated mechanism which is a necessary link in activities which may be characterized as automatic integrated patterns, such as locomotion, and associated movements. Its removal should result in hypokinesia and this is, in fact, what does occur. There develops, moreover, a relative insensitivity to proprioceptive stimulation and the organism tends to retain superimposed postures (Mettler, 1945; 1947a), an effect opposite to that which occurs when the striatum is removed.

In summary, data have been presented which are interpreted to be in accord with the assumption that the striatum is a mechanism which arises at a time when there is a necessity for a device to enable the organism to shift its attention from one type of sensory inflow to another, that it functions primarily in freeing the organism from proprioceptive dominance and that its inhibitory activity has been extended into the general area of alerting the organism, or bringing about a state of attention.

*Zubin has pointed out that if we accept the view that the striatum plays an important role in relating the organism to its environment, it is possible to interpret, in patients who turn out badly, a high degree of conceptual performance as the result of recall of material which was previously stored. He feels that the type of conceptual performance by such patients is in accordance with this view. On the other hand the acquisition of relatively new, unpractised activities would be impaired, as he finds to be the case.

Events in the Development of the Schizophrenic Process

Failure to Establish Satisfactory Contact with Reality; Interference with Learning

If one admits the possibility that the first physiologic deviations of schizophrenia usually occur at very early ages* and are of a constitutional nature or are the consequences of intrauterine pathology, it is not impossible to reconcile a biologic point of view with dynamic theory. Such a position does not, of course, negate the possibility that the schizoid process may develop much later in an initially "healthy" individual, particularly in advanced age. Whatever the precipitating cause, the nature of the first and essential physiologic deviation appears to be a perceptual one. The child may first become aware of difficulty in this area when, as interpersonal relationships increase, it becomes obvious that he is not reacting to his environment in the same way as his fellows.** Since the perceptual difficulty is most obvious in the presence of others, interpersonal relations tend to precipitate panic, and cause efforts to establish contact with reality (the struggle for empathy of the dynamicist). Such efforts, being futile, result in confusion, tension and a tendency toward seclusiveness. The seclusiveness results not merely in an avoidance of interpersonal contacts but also in a reduction of sensory influx to a minimum (this tendency, as well as the later development of organized hallucinations in such persons, was well known to the ancient writers—Mettler, 1947b; p. 498—and has recently been restudied by Hebb); and curiosity, which is likely to lead to troublesome complexity, is avoided. Relief is sought in routine activity. Thus the essential perceptual difficulty

*It appears to the writer that the perceptual abnormalities in children of four years onward are much commoner than is generally recognized. The commonly-held belief that schizophrenia first manifests itself in late adolescence or early adult life seems to derive from the fact that the greatly increased scope of interpersonal relationships that are demanded at that period merely throw into relief a pre-existing defect and tend to compound the confusions arising from that defect.

**This statement suggests that the completely-developed schizophrenic is aware that he is not reacting to his environment in a normal manner. This is not the thought that the writer wishes to convey. In the first place, the statement is meant to refer to the very young individual who is first beginning to display evidence of psychopathology. Awareness of such psychopathology is probably limited to a periodic awareness of strange sensory phenomena, and of the fact that adaptive interpersonal behavior does not produce uniformly satisfactory or expected results. As systematization of the patient's disorder progresses, his difficulties become intensely private; and, only rarely, is there any awareness of difficulty with the objective aspects of his environment.

is present in areas other than interpersonal relationships; and there occur periods of acute distortions of perspective, misinterpretations of sensory quality (misinterpretations of degrees of difference), persistence of auditory, and intensification of visual, phenomena. Even when the subject is unaware of disturbance, evidence of abnormality can be detected by the manner in which he reacts in situations requiring attention and shift (or sensory scanning), such as the necessity for timing, or the arrangement of elements in such a way as to form patterns, or drawing, involving perspective.

Since much of early learning involves not only curiosity and activity (which are likely to be avoided by the schizophrenic) but also involves the acceptance of substitute symbols for the phenomena actually observed, failure to perceive natural phenomena in a consistent manner, and in the same fashion as others, tends to distort some aspects of the learning process. Moreover, the realization that the individual has lost his grip on reality and that this situation is peculiar to himself produces panic and a sensation of isolation and deprivation in the social sphere. The initial stage of the schizophrenic process is explicable as a stage of perceptual disability, with little or no conceptual content. This stage is succeeded by a second, in which perception may or may not improve. If it does, conceptual errors are gradually corrected. If it does not, conceptual disability becomes pronounced.

The Search for Meaning in Distortion

It is not only unnecessary to assume that the schizophrenic process involves a generalized breakdown of neural activity, such as might be due to a conduction defect caused by cytologic poisoning; but such an assumption does not accord with the facts, nor could one then explain the manner in which recovery can take place. Indeed, if one is willing to admit a fundamental, early distortion in the perceptual process, it is not difficult to see how, with other functions of the neuraxis proceeding in a normal manner, very abnormal results would be achieved. What, for example, must the consequence be of the inability to establish a consistent and normal form of contact with nature and other people? There is enough observation of this state to show that persons in such situations search for meanings in the distorted disorganization at their disposal. They may still make efforts to establish contact with real-

ity by affective excesses, by fighting, by suicidal attempts or other attention-getting devices; but they ultimately pay less attention to the external world, and there is greater preoccupation with the abnormal learning which the individual has accumulated. Episodes of panic are superseded by fear that is more or less constantly present, but this is still susceptible to exacerbations. There is also a progressive loss of previously attained meanings (since these cannot be reinforced by the normal process of monitoring) as the internal search for meanings becomes intensified. This search for meaning evidently proceeds according to definite rules which are not greatly different from the rules governing normal processes, and it results in the systematization of delusions according to rather uniform patterns. Thus, there arises an effort to impart meaning to objects of the external world which have lost it; and this is succeeded by the development of a sense of independent existence in impersonal objects. At this stage, the capacity to perceive the totality of a field in any sensory sphere seems wholly lost, and only fragments can be perceived.

In some types of schizophrenia, a more or less personally satisfactory systematization is ultimately worked out, in which the individual accepts the proposition that he is being "worked" from some external source, either of a beatific or malign nature (or a mixture of such influences); and as the result, he has a sense of personal virtue or horrendous sin. The nature of the influencing agent is, of course, a production of the environment in which the individual exists.*

The second stage of the schizophrenic process is susceptible of explanation on the basis of the development of a more or less disordered conceptual process as the result of earlier perceptual disability. If the perceptual disability improves, the prognosis for the patient is good, regardless of his degree of conceptual confusion, since he will gradually be able to make his way back to the world of reality. On the other hand, even though his conceptual disorder may not be extreme his prognosis may be poor, presumably due to continued perceptual disturbance.

*The earliest published account, of which the writer is aware, of a delusional system including a complex, physical contrivance for "influencing" the patient appears in Haslam (1810). This includes a picture of the "organ" and the manner of its operation—an arresting system complete with parts of a church organ, brewing paraphernalia, static machine and malignant characters such as "the glove woman." Paranoid "systems" not including mechanical contrivances are, of course, common in the earlier literature.

Refractory Stage

With the crystallization of a system of delusions, the individual may continue to struggle onward between a distorted version of reality and his own productions; or, if his perceptual capacity improves, he may make his way slowly and painfully back, traversing all the processes the infant passed through in order to attain the experiences upon which social existence is based. More frequently, he lapses into insensibility to the external world which has become an unprofitable source of contact to him. This is the stage, variously termed regression or deterioration, in which the individual is relieved of commands (which he has been producing himself) and is relieved of fear. Well-developed hallucinations now arise to fill the void left by the absence of meaningful experience in response to external stimulation. Definite stimulus-binding may occur, especially in the visual sphere, with an inability to separate attention from inconsequential stimuli or to derive meaning from these. Indeed the process may progress well beyond the area of striatal deficit, and the patient may assume catatonic rigidity in which (as in pallidal deficit) there is profound hypokinesis and the retention of superimposed postures (Mettler, 1945).

In this, the terminal though still reversible stage of the schizophrenic process, the patient displays marked perceptual and conceptual disability and is inaccessible (Zubin and Windle, 1954), not merely because of negativism or positive resistance, but because of what has been variously called regression or deterioration.

Possible Causes of Basal Ganglia Dysfunction

Assuming that the schizophrenic process represents the dynamic evolution of a functional disorder that has its origin in disturbances of the function of the basal ganglia, how might such disturbances be produced? Of course, any destructive organic lesion or metabolic anomaly might operate in such a manner (Lewis, 1936) but the writer's own attention has been attracted more particularly to the hypothesis that, in some cases, one may be dealing with a problem of vascular supply. Man's brain exists in a precarious situation with regard to the capacity of the basal vasculature to supply the deep nuclear masses. The factor of physiologic safety in the capillary supply of this region is dangerously low. Moreover, not only are the vascular pattern of the brain and the capillary pattern of the nail bed genetically determined, but so also is, to

a certain extent, the susceptibility of the vascular system to metabolic degenerative disease. It is not difficult to visualize striatal disorder arising from the basis of a congenital deficiency of blood flow; upon the basis of subsequent narrowing of capillary supply; or upon a fluctuating basis in which, in an organism provided with a barely adequate striatal blood flow, many different variations in bodily state could produce enough change to make the difference between adequate and inadequate striatal function. It will be recalled that the early manifestations of schizophrenia are often episodic and that fluctuation is a characteristic of mental disorder. Whatever hypotheses are adopted with regard to such diseases must take these phenomena into consideration.

There is a certain relationship not only between the occurrences of schizoid states and paralysis agitans in different members of the same family (the vascular supply of the striatum has much in common with that of the neighboring regions, interference with which produces many of the elements in the Parkinsonian complex) but also between the symptomatology of Parkinsonian and catatonic rigidity. Thus, every mental institution of appreciable size can produce one or more patients who, in going into and out of catatonic rigidity, traverse a clinical territory indistinguishable from Parkinsonism. Moreover, many Parkinsonian patients go on to a schizophrenic symptomatology; and, in Wilson's disease (some neurologists to the contrary), psychotic features are very commonly encountered.

If one accepts the possibility of a vascular origin for such disorders it is possible to explain why certain drugs can exert so-called "normalizing" effects (which may, in fact, be obtained with sympathicolytic agents as well as barbiturates—Medinets, Kline and Mettler, 1948), why powerful emotional stimuli may be operative in producing changes, and why patients can go into and out of psychotic conditions—often for no apparent reason at all. On the other hand, the conception of acute episodes of local ischemia can also be introduced to serve as an explanation for periodic attacks of perceptual distortion. The principal of local vascular spasm of surface cortical vessels is now generally accepted as a possible explanation for migraine; and surgical experience has demonstrated that local vascular spasm of an extreme degree can occur in the arteries at the base of the brain.

Biologic Tests in Schizophrenia

If the theory advanced here is correct, previous searches for a biologic "cause" of schizophrenia must be viewed as excessively unsophisticated—a conclusion which any young psychoanalyst will accept with alacrity. We are faced with a situation in which the active process (for example, kernicterus, hyperthermia) occurred and subsided long ago, or in which the condition is due to an inherited deficiency or susceptibility to deficiency. Under such circumstances, by the time biologic tests are utilized, any progress which the disorder is making is, in the great majority of persons, likely to be in the psychologic sphere. In a considerable proportion of hospital cases, one is certainly dealing with a static situation. Homeostasis has been re-established over a wide range of variability; and it is only by forcing the organism to display the extremes of its adaptive capacities, that any interesting data can be developed. Unfortunately there are so many other conditioning factors in the situations of most patients, and their own unequivalence is so great, that no really pertinent information can so far be said to have been brought forward from this area of investigation.*

The failure of experimentalists to bring forward conclusive evidence of the nature of the cause of the schizophrenic process must not, however, be interpreted to mean that such reactions occur in physiologically-sound individuals. It might be asserted that, since improvement and cures have been encountered in the course of psychoanalytic procedures, any physiologic disturbances which might be present are inconsequential. Such a line of reasoning assumes that an improvement or cure which may have occurred in the course of psychoanalysis of schizophrenics is causally related to it. In the absence of reliable data to prove that point (and certain definite criteria must be fulfilled if one is to evaluate the effectiveness of any psychiatric therapy—Mettler, 1949b), the principal value of the dynamic approach must be admitted to lie in the light it has shed upon the manner in which psychotic processes develop and progress or recede.

*Even in certain circumstances in which the etiology remains ongoing, and is organic, it may be difficult to demonstrate consistent biologic changes. Thus, Professor Landis points out that no evidence has been brought forward in morphine addiction that recognizable biologic signs are regularly detectable.

Conclusions

With the reader who asserts that none of the foregoing is new, the writer is happy to agree as to details. The dynamicist will point out that perceptual distortion is an early sign of ego regression which itself is the basic event in schizophrenia. The psychologist will remind the writer that distinctions between percept and concept are very old-fashioned (the writer himself called attention to the fact that such a distinction was recognized as existing a couple of millenia past) and that even the Romans knew that sensory deprivation produced hallucinations. The social anthropologist will emphasize that the individual's sense of society membership is the conditioning element in the development of patterns of behavior, and the physiologist will drily assert that anyone in his right mind has always been aware of the constitutional background of psychiatric disorders. With each of these points of view, the writer agrees. Nevertheless, he does submit that there has been much argument among those who have been variously trained and who employ different methodologies about what is "important" in understanding schizophrenia.

The writer would submit that those things are important in understanding schizophrenia which can be objectively verified and about which all of us can agree. Such agreement is not likely to be reached upon matters of theory but only about objective data. Nevertheless, if we may adopt a temporarily permissive attitude toward matters of theory, the hypothetical frame of reference presented in the foregoing may enable us to adopt an eclectic position which would allow us to bring together the vast, older psychologic literature on perception with the evidence observed in the dynamic psychiatric approach, in an atmosphere in which modern laboratory techniques (including the methods of experimental neurology) can be brought to bear on the re-examination of particular details.

The substance of the theory advanced here is that in schizophrenia the function of the striatum is disturbed either as the result of constitutional inadequacy, lesion, metabolic failure or intoxication, or some combination of these causes. It is further assumed that, because of such dysfunction, perceptual capacity is disturbed in such a manner as to render it difficult or impossible for the young sufferer to establish contact with reality. In the case of the older person a gradual dissolution between real external, and

personally-produced internal, existence occurs—as a result of such perceptual difficulty and the consequent loss of reinforcement—by constant monitoring comparisons.

Such striatal dysfunction may improve, may remain static or may worsen and even extend into pallidal failure. If improvement in striatal function occurs, perceptual capacity also improves and the individual gradually is able to reorient himself. If striatal function worsens, a situation analogous to complete striatal deprivation—lack of affect, automatism, stimulus-binding, hyperkinesis, proprioceptive dominance, and their accompaniments—appears, but even if the striatal interference is not so severe as to amount to complete deprivation, there will continue to be perceptual disorder; conceptual confusion will inevitably result; and, depending upon how seriously the learning process has been interfered with and upon how early the difficulty arose, there will be more or less difficulty in distinguishing the real from the internally-produced; and the search for meaning will lead to a more or less organized delusional system.

In the presence of disturbances of perception the prognosis is poorer than if conceptual difficulty only is present, for such a phenomenon may merely be the result of difficulty with multineuronal circuits (organic reaction), an early sign of a great variety of types of interference with neuronal functions. There is reason to believe that prognoses based upon the presence or absence of perceptual disorder would give more reliable results and indicate earlier results than prognoses which rely for the most part upon evidence of the presence or absence of affect.

It is felt that none of the psychiatric therapies in current use have been demonstrated to be of any enduring value, although interesting leads are available from all of them, so that whenever the patient's struggle to get back to and experience reality is aided (as by physical violence, powerful emotional arousal or dramatic ritualistic procedures) some transitory benefit may be experienced. It is also noted that procedures which produce confusional states, which restrain the individual from activity he cannot control himself, or which provide him with routines in which a minimum of shifting adjustment is required, may (all or any) be found satisfying in special circumstances.

It is important to point out that while this point of view may be regarded as organically oriented, it allows for the acceptance and

utilization of the objective data amassed by dynamically-oriented psychiatrists. Moreover, increased emphasis is placed upon the individual character of different cases, not merely for dynamic reasons, but because the structural and physiologic phenomena underlying particular cases may be quite diverse in detail even though similar in principle. In this then, the psychiatric patient is like any other medical case—an individual to be studied as a whole personality, possessed of structure and organic function, as well as of psychodynamic mechanisms.

Departments of Anatomy and Neurology
College of Physicians and Surgeons, Columbia University
630 West 168th Street
New York 32, N. Y.

BIBLIOGRAPHY

Arber, Agnes (1954): The Mind and the Eye. Cambridge University Press. Cambridge.

Columbia-Greystone Associates (1949): Selective Partial Ablation of the Frontal Cortex. Hoeber. New York.

Columbia-Greystone Associates (1952): Psychosurgical Problems. Blakiston. Philadelphia.

Crandell, Archie; Zubin, J.; Mettler, Fred A.; and Logan, N. D. (1954): The prognostic value of "mobility" during the first two years of hospitalization for mental disease. PSYCHIAT. QUART., 28:185-210.

Culler, E. A., and Mettler, Fred A. (1934a): Observations upon conduct of a thalamic dog. Hearing and vision in decorticated animals. Proc. Soc. Exper. Biol. and Med., 31:607-609.

—— (1934b): Conditioned behavior in a decorticated dog. J. Comp. Psych., 18:291-303.

Girden, E.; Mettler, Fred A.; Finch, G.; and Culler, E. A. (1936): Conditioned responses in a decorticate dog to acoustic, thermal and tactile stimulation. J. Comp. Psych., 21:367-385.

Harlow, H. F. (1952): Functional organization of the brain in mentation and behavior. In: The Biology of Mental Health and Disease. Pp. 245-253. Hoeber. New York.

Harman, P.; Tankard, M.; Hovde, C. A.; and Mettler, Fred A. (1954): An experimental anatomical analysis of the topography and polarity of the caudate-neocortex interrelationship in the primate. Anat. Rec., 118:307-308.

Haslam, John (1810): Illustrations of Madness. Exhibiting a singular case of insanity and a no less remarkable difference in medical opinion: developing the nature of assailment and the manner of working events: with a description of the tortures experienced by bomb-bursting, lobster-cracking and lengthening the brain. London.

Heath, R. G.; Freedman, D. A.; and Mettler, Fred A. (1947): Striatal removal without previous cortical ablation: release, disorientation, metabolic disturbance. Fed. Proc., vol. b, p. 126.

Hogan, Charles (1952): Physiology of the caudate nucleus in the cat. Unpublished thesis for the degree of D. Med. Sc., Library of College of Physicians and Surgeons, Columbia University, New York.

Hovde, C. A., and Mettler, Fred A. (1953): Distant electrical potentials evoked by stimulation of the putamen. Anat. Rec., 115:324-325.

—— (1954): Site and latency of electrical potentionals elicitable upon stimulation of the feline and simian caudate nucleus. J. Comp. Neurol. (In press.)

Kline, N. S. (1952): Vestibular function and autokinesis. In: Columbia-Greystone Associates, 1952.

Lewis, N. D. C. (1936): Research in Dementia Præcox. Published by the Scottish Rite of Freemasonry in the United States of America.

Medinets, H. E.; Kline, N. S.; and Mettler, Fred A. (1948): Effect of N, N-dibenzyl-B-chlorethylamine hydrochloride on autonomic functions and catatonia in schizophrenic subjects. Proc. Soc. Exper. Biol. and Med., 69:238-246.

Mettler, C. C. (1947): History of Medicine. Blakiston. Philadelphia.

Mettler, Fred A. (1935a): Cortical function and cerebral localization. J. Gen. Psych., 13:367-401.

—— (1935b): Preservation of learning ability after total removal of the cerebral cortex. J. Med. Assoc. Georgia, 24:1-4.

—— (1940): Extrapyramidal function. J. N. M. D., 92:141-150.

—— (1943): Extensive unilateral cerebral removals in the primate: Physiologic effects and resultant degeneration. J. Comp. Neurol., 79:185-245.

—— (1945): Effects of bilateral simultaneous subcortical lesions in the primate. J. Neuropath. and Exper. Neurol., 4:99-122.

—— (1947a): Hypokinesia and the retention of superimposed posture in the primate as a result of neural lesion. Anat. Rec., 97:114.

—— (1947b): See Mettler, C. C., 1947.

—— (Editor, 1949a): See Columbia-Greystone Associates, 1949.

—— (1949b): A comparison between various forms of psychosurgery. N. Y. S. J. Med., 49:2283-2286.

—— (Editor, 1952): See Columbia-Greystone Associates, 1952.

Mettler, Fred A.; Ades, H. W.; Lipman, E.; and Culler, E. A. (1939): The extrapyramidal system. Arch. Neurol. and Psychiat., 41:984-995.

Mettler, Fred A.; Crandell, Archie; Wittenborn, J. R.; Litten, K.; Feiring, E.; and Carpenter, M. B. (1954): Factors in the pre-operative situation of schizophrenics, considered to be of significance in influencing outcome following psychosurgery. PSYCHIAT. QUART., 28:549-606.

Mettler, Fred A.; Hovde, C. A.; and Grundfest, Harry (1952): Electrophysiologic phenomena evoked by electrical stimulation of the caudate nucleus. Fed. Proc., 11:107.

Mettler, Fred A.; Mettler, Cecelia C.; and Culler, E. A. (1935): The effects of total removal of the cortex. Arch. Neurol. and Psychiat., 34:1238-1249.

Mettler, Fred A., and Mettler, Cecelia C. (1940a): Labryinthine disregard after removal of the caudate. Proc. Soc. Exper. Biol. and Med., 45:473-475.

—— (1940b): Extrapyramidal inhibition of cortically induced movement. P. 127. Proc. 52d Meeting Am. Physiol. Soc.

—— (1941a): The "leaping" phenomenon: A sign of striatal damage. P. 199. Proc. Am. Physiol. Soc.

—— (1941b): Effect of stimulation of the caudate nucleus. Proc. 57th Sess. Am. Assoc. Anat., Anat. Rec., 79:47.

—— (1941c): Role of the neostriatum. Am. J. Physiol., 133:594-601.

—— (1942): The effects of striatal injury. Brain, 65:242-255.

Penfield, W., and Jasper, H. (1954): Epilepsy and the Functional Anatomy of the Human Brain. Little-Brown. Boston.

Penfield, W., and Rasmussen, T. (1950): The Cerebral Cortex of Man. Macmillan. New York.

Sheppard, L. A.; Kline, N. S.; and Holsopple, J. Q. (1948): Vestibular function. In: Columbia-Greystone Associates, 1949.

Weber, J. (1952): Metabolic changes in cats following lesions of the striatum and other subcortical nuclear structures. Unpublished thesis for degree of Med. Sc.D., Library of College of Physicians and Surgeons, Columbia University, New York.

Zubin, J., and Windle, C. (1954): Psychological prognosis of outcome in the mental disorders. J. Abnor. and Soc. Psychol., 49:272-281.

Zubin, J.; Windle, C.; and Hamwi, V. (1953): Retrospective evaluation of psychological tests as prognostic instruments in mental disorders. J. Personal., 21: 342-355.

THE PSYCHIATRIC SIGNIFICANCE OF TATTOOS*

BY SHIRLEY M. FERGUSON-RAYPORT, M. D., RICHARD M. GRIFFITH, Ph.D., AND ERWIN W. STRAUS, M. D.

I. Introduction

Today, in our culture, the tattoo no longer has the significance that it had among primitive peoples; yet it is not merely a haphazard souvenir. Rather, it may be viewed as a mode of expression of a life pattern.

It is part of our common experience that one aspect of a matter gives us a clue to the whole; that we are able to understand each other by countless incomplete means of communication. The person who is versed in music may identify the composer after hearing but a short phrase of one of his unfamiliar works, and each of us may recognize a friend from afar after seeing a single characteristic gesture. The student of behavior finds a consistency in the individual's conversation, gait, manner of dress, and so on. He sees each as a variation of the central personality theme. The tattoo, therefore, might prove to be another mark of the personality. This study was undertaken to find out whether, despite the many accidental factors involved, the tattoo and the circumstances associated with its acquisition could be correlated with the personality type—with the individual's way of experiencing the world.

II. Anthropological Survey

A review of prehistorical legends and historical literature suggests the following anthropological constructions in regard to tattooing as a manifestation of a basic human attitude.

Since its origin at the dawn of humankind, body marking has been present continuously in the repertoire of man, although it has played diverse roles. The Biblical story of the first couple on earth probably holds one of the earliest documentations as to the inner meaning, the impetus, for this practice. The parable seems to describe the transformation of man from a paradisiacal creature into a human being who, knowing about himself, is no longer able and willing to accept himself and his body as he came from nature. The Bible tells of Adam and Eve living in the Garden of Eden, unclothed and happy, in harmony with all the animals, as long as they

*From the Veterans Administration Hospital, Lexington, Ky.

obeyed without questioning. Then, having eaten of the forbidden fruit, "The eyes of them both were opened, and they knew that they were naked; and they sewed fig leaves together, and made themselves aprons." This may symbolize man's awakening to reflect upon his own existence, as well as signifying an attempt to protect himself. He sees himself in relation to other beings and against the backdrop of time and space; he becomes cognizant of his ability to modify himself and to play roles. He steps onto the stage of history.

As a social being, man gradually found that in very direct ways he could mold his own body into a social instrument—by painting, cutting, scarring. The oldest example of tattooing thus far known is of Egyptian mummies, dating from around 4000 B. C. The custom can be followed to Greece, Persia, the Sudan, China, Japan, and the Polynesian Islands, where an artistic peak was reached and where the word *"tatua,"* meaning artistic, originated. Archaeologists have found evidence of tattooing in South American Incan civilization dating as far back as 1100 A. D.

In these cultures, tattoos of various kinds were important and serious aspects of communal living, assuming religious, magical, and social significance. Tattoos were guarantors of survival after death, and, in times of ill health, served to keep the soul in the body when the demons of pain were at work. They were applied as insignia of an ardent worshipper and were incorporated into elaborate rituals in tribal ceremonials as stamps of certain periods and states of life: puberty, fertility, and so on. There were, also, individualized patterns, identifying a family, clan, or tribe, or giving recognition by proclaiming a man's prowess along certain lines. In addition, tattoos were used as brands of punishment and to inspire fear into foes in time of war.

Thus far, then, the tattoo can be seen to express man's magical relation to the forces of the universe and to serve as a symbol in his relation to his fellow-beings in a group. Being permanent and indelible, the tattoo was an important stabilizing factor in ancient cultures. Above all, it can be seen as a tribute to man's ability to reflect upon himself and to modify his natural condition.

As civilizations developed, man appears to have been less inclined so to decorate his own body and, his scope enlarging, found other means of dealing with evil demons and foes and of indicating awe, grief, status. He learned to placate his gods with sacrifices or

prayers; to make emblems, flags and medals as acknowledgment of belonging and of success; to cover his body with clothes and jewels; and to acquire possessions which became extensions of the self. However, so strong is this urge to modify the natural state directly —to make the body as it should be or as one would like it—that, despite both Judaic and early Christian prohibitions of magic tattooing, some variation of this custom is found in most cultures, up to this day. We may run the gamut from such practices among still primitive tribes as pricking the lips so as to enlarge them greatly, wearing of nose rings and removing sound teeth, to oriental binding of feet and to western piercing of ears, hair-cutting, permanent waving, wearing of make-up, shaving, removal of "superfluous" hair, use of perfumes or cosmetics, and plastic surgery.

Despite these accepted ways of directly and indirectly modifying one's body, the more primitive form, tattooing, has continued in our own society, though with considerable change in meaning since its re-introduction to western civilization in the days of sailing vessels. A trip through distant waters was then an adventure whose outcome was filled with uncertainty. The men who sailed to Africa, India, the Pacific Islands, and South America obtained tattoo marks from the natives as permanent reminders of their brave and dangerous voyages to strange lands. Such emblems, indicating accomplishment, promoted group stability and were an accepted style among seafarers. Hamby[1] refers to hardy and respected Cape Cod seamen among whom nine out of 10 were tattooed. Although the magical quality of primitive tattooing was absent, yet there remained the social function: the permanent embodiment of one's accredited past. A genuine group experience operated as a common factor.

Since the advent of the steamboat more than a century ago such voyages have become less precarious. The business of tattooing has been transplanted to the West, so that every man, without leaving home, can wear the sign of the great adventurer, of the bold sailor, of the strong male. Today someone may decorate himself with the tattoo of a remote place without ever having left the country. Although a group factor has been preserved, the symbol is usually empty, insofar as it extols no actual experience.

The man tattooed today, in most cases, would like to be, or acts as if he were, one who has earned such an emblem, he plagiarizes a once serious ceremony. Thus, the tattoo has become the "crest,"

sometimes borrowed by others, of those who are out of the main stream of society, of those unable to gain sufficient satisfaction from, and to adjust to, more highly developed mores. Tattooing has become a popular group activity among such people, especially under military or penal conditions. One may also note that, as the social significance deteriorated, the esthetic value of the tattoo also dropped. Whereas the primitive tattooist had the status of an artist, the present-day tattooist belongs to the traveling carnival.

III. Review of the Literature

There are several studies in the literature of tattooing as encountered in military situations. In 1925, Coureaud[2] examined 300 tattooed French sailors and concluded that these men should be carefully evaluated psychologically, since among them could be found a large number of "black sheep," including homosexuals, pimps, and those diagnosed as having behavior disorders. In 1943, Lander and Kohn,[3] working at an induction center in the United States, found that, regardless of the content of the tattoos, the rejection rate for tattooed men was 50 per cent greater than for the non-tattooed and that 58 per cent of all rejections among the tattooed were on the basis of neuropsychiatric disability, in contrast to 38 per cent among the non-tattooed.

Between 1944 and 1946, Kramish[4] made a study of "Love" and "True Love" tattoos on fingers, as encountered in an induction center in the United States where about 300 men were screened each day. These tattoos consist merely of these two words and are found on the dorsal aspect of the proximal phalanges so that there is one letter on each finger. In the case of the "True Love" tattoo, "True" is imprinted on one hand and "Love" on the other. "True Love" tattoos indicated a homosexual faithful to one partner, "Love" tattoos a homosexual active with any one who would submit—169 men had "True Love" and 84 had "Love" tattooes. About one-half of these tattoos had been obtained in reformatories or correctional institutions before the inductees had reached the age of 18, while the rest had been acquired at later ages during confinement in state or federal prisons. Over 90 per cent of these men were rejected for neuropsychiatric disabilities. The diagnoses were: constitutional psychopathic state, 70 per cent; inadequate personality, 10 per cent; schizophrenia, 5 per cent; psychoneurosis, 3 per cent; emotional instability, 3 per cent; manic-depressive psy-

chosis, 2 per cent; paranoid state, 3 per cent; obsessive-compulsive state, 1 per cent; neurotic trait, 2 per cent; and simple adult maladjustment, 2 per cent.

Solowjewa,[5] investigating tattoos among young criminals, in 1930, found that tattooing was one of the first indications that a child was going astray.

Studying tattoos of criminals in eastern Europe, in 1929, Sudomir and Zeranskaia[6] found that all tattoos had been obtained voluntarily and that, although many subjects expressed wishes to be rid of them, fresh tattoos found next to those eradicated pointed to the subject's lability and to the absence of any real discontent with tattoos. The authors did not find that the individual's occupation influenced the content of his tattoo. They felt that the desire for tattooing found most commonly among soldiers, sailors and criminals grew with the isolation from love objects and indicated a turning to narcissism. Parry,[7] writing on "Tattooing Among Prostitutes and Perverts," states that the tattoo expresses masochistic-exhibitionistic drives and directly illustrates and encourages homosexual activity. He holds that tattoos are often compensatory in individuals poorly adjusted, especially in the sexual sphere.

IV. Method

With these collected data from the literature and with the writers' own suppositions as to the connotation of tattooing, the content of the tattoos in relation to the personality of those tattooed was studied in patients with the diagnoses of "Personality Disorder" and of "Schizophrenic Reaction" admitted to the neuropsychiatric section of the Veterans Administration Hospital at Lexington, Ky., over a seven-month period (September 1952 to March 1953). For comparison, a second group was gathered from among the chronic hospital patients, special attention being focused upon schizophrenics who were tattooed.

Personality disorder is understood, according to the diagnostic manual of the American Psychiatric Association[8] to be "characterized by developmental defects or pathological trends in the personality structure with minimal subjective anxiety, and little or no sense of distress. In most instances, the disorder is manifested by a lifelong pattern of action or behavior, rather than by mental or emotional symptoms." (This group will be referred to through-

out the paper as PD—singular and plural.) PD were chosen for detailed study because, as indicated in the foregoing, tattoos are seen most frequently in individuals so classifiable. The schizophrenics were selected because it was felt that they would show peculiarities in this, as in all their other practices, thus illustrating how the tattoo may reflect personality patterns. Other categories were excluded from the study because of the insufficient incidence of tattoos or because of difficulties in evaluating the underlying personality, as in cases of organic brain syndrome.

During the seven-month period there were 232 neuropsychiatric first admissions. Final diagnoses comprised: personality disorder, 35; schizophrenic reaction, 90; psychoneurosis, 46; organic brain syndrome, 57; manic-depressive psychosis, two; barbiturate addiction, one; neuropsychiatric disorder, undetermined, one. Included in the group of PD were patients diagnosed as having inadequate, emotionally unstable, passive-dependent, or passive-aggressive personalities, and immaturity and antisocial reactions.

Thirty-seven, or 16 per cent of the total number of admissions, had tattoos. Twenty of these patients belonged to the PD group, representing 57 per cent of the PD admissions; nine were schizophrenics, an incidence of tattooing of 10 per cent among the schizophrenics admitted. The other eight tattooed patients were diagnosed as: anxiety reaction, four; organic brain syndrome, three (lues, operated brain tumor, alcoholism with psychotic reaction); and mental deficiency, one.

In addition, among 943 chronic hospital patients, 86, or 9 per cent, were found to have tattoos: 62 of the tattooed patients were schizophrenics. The diagnoses of tattooed non-schizophrenics comprised: cerebral arteriosclerosis, three; lues, nine; multiple sclerosis, one; Parkinsonism, one; convulsive disorder with psychosis, one; alcoholic deterioration, two; post-traumatic syndrome, three; mental deficiency, two; postencephalitic state, one; and manic-depressive psychosis, one.

In the investigation, color photographs of tattoos were taken (to allow their study out of context) along with extensive standardized interviews which included inquiries as to the mode of acquiring the tattoo—when and where it was obtained, who did the tattooing, whether the patient was inebriated, whether he went alone or with a group, what was his own attitude and that of others at that time and later on. For general information, data about family, school,

marriage, military service, work history, hobbies, religious activities, and incidence of venereal disease were added. The presence of unusual hair styles, sideburns, or mustaches was noted.

This procedure allowed inquiry into two parallel correlations: of the psychiatric characteristics of the patients, as revealed in personal interview and clinical history, with (a) the nature of tattoos (number, arrangement, location, quality, content); and with (b) the circumstances of acquisition.

V. The Tattoos

A. *Classification.* It is impossible to review the number, quality, arrangement and location of the tattoos in the two groups that were studied without constant reference to their content. This attempt to subdivide tattoos according to content has been made, therefore, with the full realization that no such classification can be "water-tight."

1. Identification tattoos	
a. Emblem	Various branches of service; anchors.
b. Personal data	Initials or name, social security number, serial number.
c. Diary	Specific events in life, with or without dates.
2. Love tattoos	
a. Idealized love	Head of woman in flower or halfmoon, a woman draped in a flag.
b. "Mother"	Heart, flower, etc., inscribed with "Mother."
c. Sentimental	Girl's name, hearts and flowers, hands clasped.
d. Pornographic	Nudes: With or without snakes, daggers, peacocks, scarves, bathing suits, and those which presented an obscene view to the patient and a more acceptable pose when inverted for the viewer.
3. Bombastic and pseudo-heroic tattoos	Skull and crossbones; dagger with "Death Before Dishonor"; dagger through the skin; "Man's Ruin" as caption for a picture of dice, cards, a bottle, etc.; a woman in a wine glass; dragon, tiger, panther.
4. Inveighing fate	Cat with "13"; horse shoe with "Good Luck"; "Good Luck, Hard Luck" "Friday the 13th"; a spade (playing card figure).
5. Religious and commemorative	Cross: "In Memory of ....." Inscription about Jesus, etc.
6. Private symbols	Of significance limited to wearer.
7. Miscellaneous	Animals and birds: horse's head, pig, rooster, squirrel, bat, bluebird, butterfly. Flowers: roses.

B. *Description of Tattooing.* Among 20 PD there were 85 tattoos, or more than four to the patient. Only 20 per cent of these patients had single tattoos. *Multiple tattoos* appear characteristic of the PD; *single tattoos* are more frequent in the schizophrenic. In 61 schizophrenics, there were 150 tattoos, or two plus per patient, 50 per cent having but a single tattoo.

Typical also was the content chosen for the *single* tattoos. Among the 31 single tattoos of the schizophrenics, were 12 emblems, five initials (their own), three private symbols, five tattoos with mother themes, three religious tattoos, and one each of an Indian head, a butterfly and a rose. The four PD with single tattoos had: a dagger through a heart, and a girl's name; a heart pierced with an arrow and inscribed with "Frankie and Johnnie, Hawaii"; a horseshoe with "Good Luck" and the man's own initials; and a woman sitting in a wine glass with the inscription, "Man's Ruin."

C. *Execution.* Patients with personality disorder frequently have crudely executed tattoos. The outlines of a nude may be drawn by an obviously inexperienced and careless "artist"; figures may be left unfinished; inscriptions may contain misspelled words or diminutives; if initials are used, the letters frequently are of considerable size and in a flourishing script.

The flippant, living-in-the-moment philosophy of the emotionally unstable individual, with his failure to treat anything as sacred or to anticipate the consequences of his acts, stands in contrast to the compulsiveness and feelings of insignificance and guilt of the schizophrenic. The schizophrenic's tattoos are well and accurately executed. If there are initials, they are most often in tiny letters —as if he were reducing the "I" to "i."

When a patient has more than one tattoo, the *arrangement* contributes to the differentiation of the two classifications. The PD tends to have his tattoos applied in apparently haphazard fashion, although some reason for their placement may be grasped after obtaining the history of each tattoo. In contrast, the schizophrenic often shows a painstaking exactness of placement so that one has the feeling that the location was determined by the dropping of a plumb line. Symmetry in the schizophrenics' tattoos is found in three forms: (1) in location alone; (2) in content, determining location; and (3) in size. As for the first, one catatonic patient had four tattoos, the subject matter of which was confined to variations of his and a girl's initials and names; two on the upper arms

and two on the lower arms were in identical positions. In another schizophrenic, the head of an Indian brave appeared on the flexor surface of one forearm and the head of a squaw in an exactly corresponding position on the other forearm—a case of content determining location. In one paranoid patient who had 10 tattoos, there were five small tattoos on one arm and five oversized ones on the other.

In addition to the arrangement of the tattoos, the choice of *location* on the body must be considered, since different areas have their own social values. The most common site is the outside of the lower arm. This location was preferred by 31 (or 50 per cent) of the schizophrenic patients and by 14 (or 70 per cent) of the PD.

In contrast, there are "secretive areas," the upper arm and the inside of the lower arm, which may hold what a patient would hide if he were hesitant about his proposed acquisition. The greater number of nude tattoos were in the secretive areas, while such "creditable" tattoos as emblems tended to be placed on the outer aspect.

Both the PD and the schizophrenics used the leg as a tattoo site. However, leg tattoos were encountered in 20 per cent of the PD but in only 5 per cent of the schizophrenics. In addition, whereas in all the PD the leg was one site among many, in the schizophrenics it was the location of a solitary tattoo. The subject matter varied here as elsewhere: the PD had "good luck" emblems or playing cards inscribed, whereas the schizophrenics chose such patterns as a butterfly or a cross with "In Memory of Mother."

The dorsa of the fingers were used for "Love" and "True Love" tattoos, which, as mentioned, have been shown to be associated frequently with homosexual activity, usually during confinement in disciplinary institutions. There were several patients so tattooed. One had "Good Luck" and "Hard Luck" which probably had similar significance.

PD occasionally chose the chest, with bluebirds over each nipple as one of the popular subjects.

The schizophrenic attitude may manifest itself by the choice of unusual sites. Instead of decorating arms, legs, or chest, the schizophrenic may place a single tattoo on his abdomen or on the inside of his wrist (the site for the social security number of one of the patients).

D. *Content.* Tattoos of the identification class were found in both groups, but even here some differences are apparent. Emblematic tattoos were popular with both, but the PD chose his as one of several tattoos and, furthermore, chose a standard design, such as an eagle with USA. The schizophrenic frequently wore his emblem as his sole tattoo and embellished it with stars, his own name, etc. Whereas the schizophrenic used miniature letters for the inscription of his initials—as already mentioned—he chose unusually large emblems.

Tattoos with a "Mother" theme occurred in four of the PD and in a similar proportion of the schizophrenics. In the PD, these tattoos showed indications of immaturity and sexual uncertainty; a heart with "Mom and Dad"; a nude, palliated by "Mother" close by. The schizophrenics associated mother with religious or sentimental pictures; crosses inscribed with "In Memory of Mother," or hearts, flowers, or a dove dedicated to "Mother."

The inveighing of fate was common among PD, who so little direct their own destinies but turn to the wheel of fortune rather than turn, as the schizophrenics do, to God. Included here were: a horseshoe with "Good Luck"; a cat with "13"; "Friday the 13th"; "Good Luck" and "Hard Luck"; and a spade. Related is the immature play world of the PD who depicts on his body "Mickey Mouse," "Spike," a cartoon figure, or a baby in a bathtub with "Holding My Own." The commemorative tattoo, on the other hand, was found solely among the schizophrenics. This is not surprising, since the PD associates the tattoo with the moment, with himself in a convivial group—rather than with after-life and with another person who is not of sexual interest. Such schizophrenic tattoos included crosses or tombstones variously inscribed with "In Memory of Mother and Sister," etc.

Figures 1 to 4 illustrate typical contrasts in content between schizophrenics and PD.

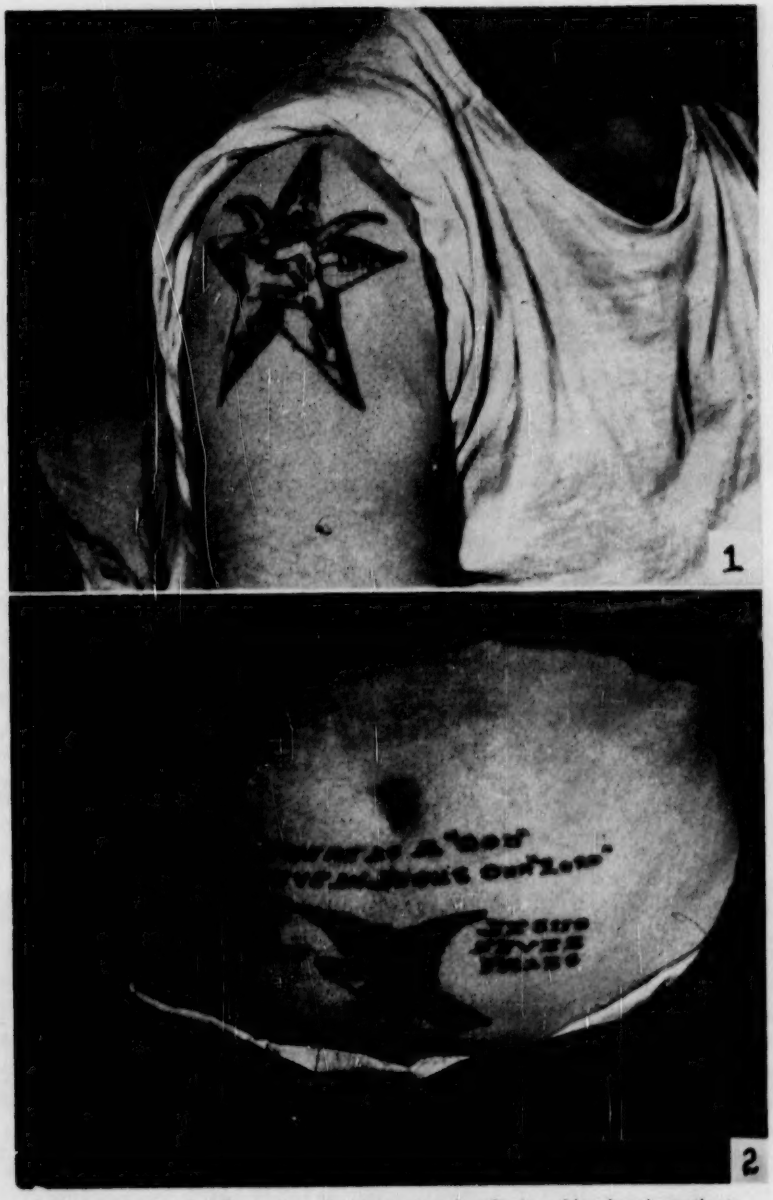
For the PD, pornographic and sentimental, as well as bombastic and pseudo-heroic, tattoos are nearly pathognomonic. There were nudes of all sorts (Figure 4), some with coverings tattooed on later, along with other symbols of man's undoing, such as drink, cards, and dice. In addition to these reminders of "Man's Ruin," there were gestures of gallantry, such as a dagger with the warning, "Death Before Dishonor."

Whereas erotic feelings in the PD are expressed directly, one encounters, in the schizophrenic, indications of distance from normal, especially sexual, contacts. The schizophrenic may choose his female figures in idealized form or as a personification of a lofty idea: woman draped in a flag (Figure 3); flag with a woman's head; head of a woman in the cradle of the new moon or in a flower. Related to such detached treatment of common urges, are inscriptions found only among the schizophrenics; instead of "Love" or a girl's name on hearts or ribbons, the schizophrenic may choose "War" or "Liberty" as a motto for the same "escutcheon" for which the former would be appropriate.

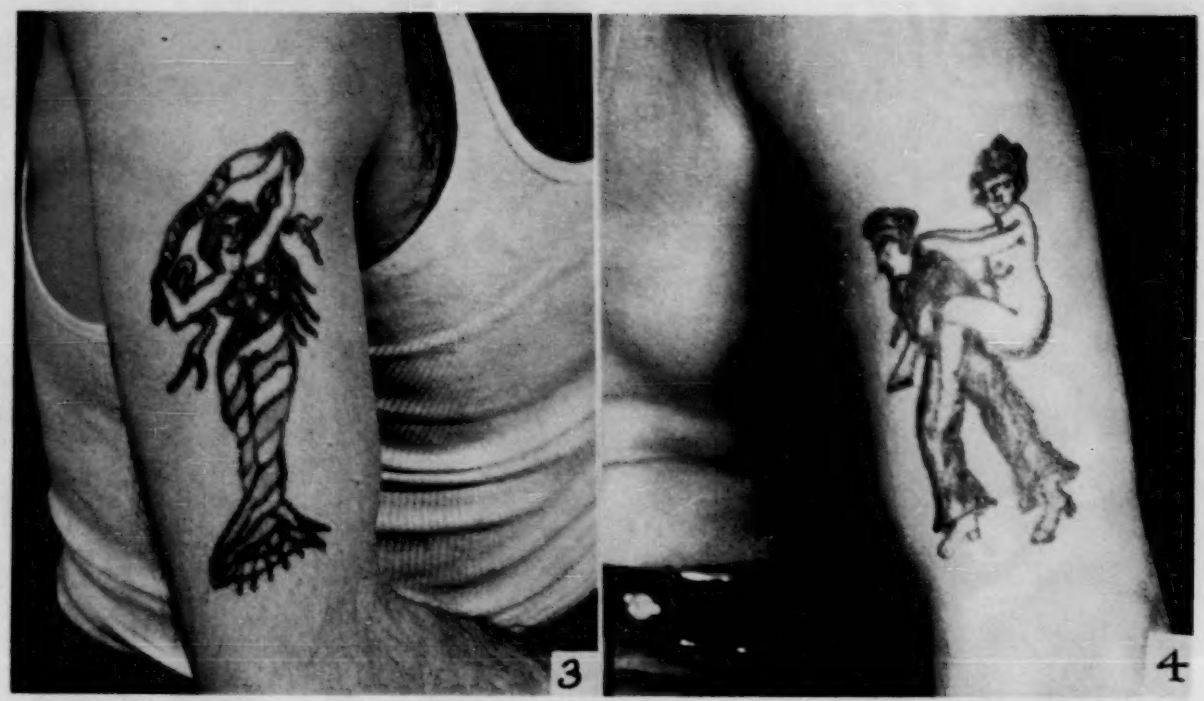
In this series, six patients had what may be best labelled truly schizophrenic tattoos. Such a tattoo is one with private symbolism, never duplicated, sometimes tinged with magical quality which pictorializes the deep uncertainty of the self and the tangential, distant, concrete attitude of the schizophrenic. One patient had his initials, in small size, each in a square box, surrounded by four arrows pointing in a counterclockwise direction. The arrows, suggestive of circular motion, seemed to force attention to the all-important initials, perhaps thereby giving some security. Another had a heart, with a small arrow at one border and the uncapitalized initial of his first name above. A third patient displayed a tattoo of a star with a steer's head in the center and with a letter symbol, such as "p" "x," etc., in each of the five points of the star (Figure 1). A fourth patient had a large rectangular tattoo with four smaller rectangles inside. In each of these, were signs interpreted by him as astronomical symbols. A fifth patient chose an unusual location as well as an odd religious text to accompany his single tattoo that practically filled the area between umbilicus and symphysis. In the center was a spread eagle and, around it, inscriptions perseverating on one theme with parallelism of ideas and of statements, and with individualized punctuation.

Thus: "There is a 'God'
I believe in Jesus our 'Lord'
God is first
Jesus never fails."

In the place of "Amen" and in deference, so it seemed, to the eagle was "USA." (Figure 2.)



Figures 1 and 2. Examples of tattoos found only in schizophrenic patients.



Figures 3 and 4. Figure 3, "Love" tattoo as acquired by schizophrenic patients. Figure 4, "Love" tattoo as acquired by patients with personality disorder

Under the head of "Miscellaneous Tattoos," may be mentioned the high incidence of stars in the subject matter of the schizophrenics, especially the paranoid type. Drops of blood below daggers were found only in the schizophrenics. The rose was associated with alcoholism. Among the PD, three with a diagnosis of chronic alcoholism had such tattoos; in a case of Korsakoff's syndrome, the patient had a rose on either shoulder; a schizophrenic with alcoholism also had one on each shoulder; another schizophrenic with the same diagnosis had an uninscribed large rose as his only tattoo. This choice correlates with Rorschach responses, where the rose appears to be related to emotional extremes—elation or depression.

Briefly, then, it is possible to say that the tattoos of the PD are more frequently multiple than otherwise and are carelessly executed. The subject matter of preference is pornographic and sentimental or bombastic and pseudo-heroic. They bear inscriptions in flourishing strokes, and are placed on arm, leg, and chest in haphazard fashion. The schizophrenic more often than not, has but one tattoo of the identification type, is given to the more serious subjects—especially to commemorative and personally symbolic tattoos—chooses lettering which is small and inconspicuous, and often places his tattoos in unusual locations and arrangements.

VI. The Tattooed

A. *Relevant Anamnestic Material.* The average educational level attained by the PD was the eighth, by the schizophrenics the ninth grade.

Adjustments in the marital sphere were precarious. Counting only those about whom reliable information was available, the writers found among the PD one married subject, two remarried after divorce, one married to the same woman several times, one living with a woman out of wedlock, one divorced, two separated, six who had been divorced or separated more than once. Among the schizophrenics, 12 were single, nine divorced or separated, six having been divorced or separated more than once. One had a common law relationship. There was a history of venereal disease in four PD and in eight schizophrenics.

The average duration of military service in both groups was 3.5 years. This correlates with hospital experience that the schizo-

phrenic in partial remission and the PD get along well in a supervised setting.

B. *Circumstances of Acquiring a Tattoo.* The circumstances and attitudes with which an individual gets a tattoo follow a pattern more or less typical for his group.

In both groups, tattoos were obtained at early ages. For the first tattoo, the average age was 18 in the PD, 21 in the schizophrenics. Thirteen of the PD were tattooed while in service and one, at least, while in prison. It is interesting to note that similar ages for the first tattoos have been reported in other countries.[5, 6, 9] Whereas formerly the tattoo was a souvenir from distant places, in the writers' group of PD only 25 per cent received their tattoos outside the continental United States (in Honolulu, Pearl Harbor, Panama, and Europe), while among the schizophrenics the percentage is much smaller: three obtained them in other countries, 38 in the United States (no information from 21). Most of the schizophrenics had their tattoos before hospitalization for mental illness. (This may be an interesting commentary on the current concept of schizophrenia as a life-long pattern of adaptation.) Tattoos were applied by a professional tattoo artist in 12 PD, by friends in six, and were self-applied by one. As for the schizophrenics, reliable information was obtained from 30, of whom 27 had sought professional tattoo artists, two had been tattooed by friends, and one had tattooed himself.

None of the PD had gone alone to the tattooist; obtaining tattoos was a group activity. The usual history is that the patient went to a bar with a group and, after drinking considerably, all patronized a tattoo artist in the bar or close by. A few, those with immaturity or passive dependency reaction, were glad that they had been tattooed and looked forward to getting more tattoos in the future. Some insisted that they had not really wanted to be tattooed, that they had been talked into it or had been tattooed on a "dare." The majority stated that "after sobering up," they had regretted that they had been tattooed, because "People think you're a rough character, that you're no good if you have a tattoo." Several said that they would have had the tattoos removed if it hadn't been for the expense and the pain of removal; others plan to have clothes applied on their nudes as soon as they can afford it. Such regrets, expressed at the time of the interview with the psychiatrist, appeared

in reality to be either non-existent or fleeting for most of these men had made several successive trips to the tattoo artist. Such inconsistent behavior was also noted in studies abroad.[8] If the regrets were sincere they would merely indicate passivity, submissiveness, lability—with sudden decisions for immediate action and lack of resistance to temptation, ending in a repetition of a lapse previously regretted, as so often seen in the life of PD.

The schizophrenic obtained his tattoos in a much more serious mood. He usually went alone to the tattooist, as a rule he was not drunk; often he planned the trip, and usually remained very fond of his acquisition. Most of the patients who were able to communicate in a coherent manner reported that they had thought about getting a tattoo for a long time. Several had obtained their tattoos years before their schizophrenic breakdowns caused their confinement. The majority of the schizophrenics got their tattoos with the feeling that they were performing a duty, doing something one does. A few wanted tattoos for the practical purpose of identification in case of an emergency; to many more, the tattoo seemed to give a feeling of belongingness or to provide some magical protection from evils that might threaten them.

Keeping in mind the usual characteristics of the PD and of the schizophrenics' tattoos, it is interesting to examine apparent exceptions. There were some schizophrenics whose tattoos, because of their number or type, seemed at first glance, to belong to the PD group. When several factors, such as location, content, personal attachment to the tattoo, and circumstances of acquisition are considered, the constellation may even in such cases well express the personality of the tattooed. For example, one patient with four tattoos and another one with seven had placed all of them on the inner aspects of the arms. Another schizophrenic, always quiet spoken, sometimes sullen but never aggressive, had 10 tattoos, two of them unusually placed. Pornographic and bombastic tattoos were in secretive areas while on the outside of his lower arm were: a flower with a ribbon, a bird carrying a flower on a ribbon inscribed with "Mother," an anchor, and an angel on a cross. He reported that his favorites were "Mother" and the angel, that he had gone alone for the tattoos and that he had not been inebriated: "I thought it would make me feel tougher coming back to the ship. I tried to be as tough as I could. They were false pretenses—I pretended to be tough, even if I wasn't." Here, then, is the still-func-

tioning schizophrenic, longing for the toughness and easy relationships which belong to a man's, a sailor's, life.

Another schizophrenic of puny build, who had tantrums on the ward, had four tattoos: Three on the outside were large and blatant—a girl in a bathing suit, skull and crossbones pierced by dagger, and "Death Before Dishonor," while on the inside of his left arm was a small heart inscribed with "Mother." If (as was suggested) he could get rid of all but one tattoo, he promptly decided he would keep just the word "Mother" and put it on the inside of his right arm.

C. *Case Histories.* Despite the chance way in which the PD acquires his body marks, the tattoo constellation frequently is intimately bound to his living pattern, as illustrated in the following case histories.

Case 1

One patient in the PD group, with a diagnosis of antisocial reaction, was an only child who stated that during childhood his every wish had been granted. Nonetheless, at the age of 16, he became restless and decided to leave home. He maintained himself for a year, working as a cook in a distant place. He then returned home and married a childhood sweetheart but left her after a short time. A few years later, he joined the army, only to spend considerable time in the guardhouse during his two years of service. Upon discharge from service, he returned to his trade but switched from one job to the other until he finally decided to join the merchant marine. At the end of two years he tired of this, too, and came back to shore life. Since then he has been roaming from place to place.

He remarried but is now in the process of getting a divorce: "It was a shotgun wedding. We had a kid and she wanted it to have a name. I never stayed with her, and I don't care anything about the kid. From now on, I'll shack up with some one. It's easier that way—you don't have any responsibilities." He acquired a venereal disease twice. His hobbies are drawing cartoons, photography and watching boxing matches.

He obtained his first tattoo, a heart inscribed with "Mother," when he left home at 16. His other tattoos were received while he was in the army, either during alcoholic sprees with his buddies or while he was confined in the guardhouse. "In the first case, a bunch

of us guys were drinking. There was an arcade next door, so we decided to go in. . . . In the guardhouse I did it just to pass the time."

His failure to take anything seriously is reflected in the careless execution of many of his tattoos. They are placed in a random fashion, but, when location and content are noted, a logical thread appears. Three nudes and the head of a cowgirl appear on the outside of his arms while sentimental tattoos, three hearts and a doll, are on the inside. On his hands are inscribed, "True Love." This arrangement suggests that the patient is immature, sentimental, and engages in homosexual activity, while trying to make the world believe—by placing pornographic tattoos in a prominent location—that he is a sexually aggressive male. His alternating from cook to soldier, his failure in sexual adjustment as well as his grooming—thin mustache, sideburns, and meticulously waved hair—are in line with such a conclusion.

His feelings about the tattoos follow the general pattern. At first he was proud, but, as with everything else, he soon wearied of his tattoos, "After a while I got tired of 'em. I could see what a damn fool I was. I wouldn't get another for $500. I'm going to put clothes on them when I get out of here." Here are reflected restlessness, lability, and indifference to a long-range plan. He realizes the meaning tattoos have for "society," can mouth it at the proper time but, as in every sphere, cannot live up to the accepted code.

Case 2

Another patient with a diagnosis of inadequate personality with alcoholism followed the usual pattern of acquiring tattoos. He used secretive areas for less acceptable subject matter and indicated his feeling about the status-giving value of a tattoo.

The fourth and last child of a lawyer, this patient had left school at the age of 16, upon completion of the tenth grade, to join the marine corps. He received an honorable discharge after three years of service, but subsequently, after six months' service in the navy, for which he had volunteered, he was discharged for bad conduct. Following his return to civilian life, he did not work, and spent most of his time in jail or in hospitals after alcoholic bouts during which he indulged in antisocial behavior.

He received his first tattoo after three months of service in the marine corps. He and several friends from his home state had gone out on a drinking spree and ended up at the booth of a tattoo artist. All obtained similar tattoos, a marine corps emblem inscribed with "Semper Fidelis." This was placed on his lower arm, outside. Later, under similar circumstances, he had another emblem placed on his leg, because "I had seen others with them." Then, growing bold, but not bold enough to let all see, he had placed on his upper arm a nude with a dagger and the inscription "Death Before Dishonor." Upon returning home from the marine corps, he made a solo and sober trip to a tattooist for the purpose of having the marine corps emblem on his arm completed. Wanting every one to know that he was a veteran of the marine corps, he ordered the addition of "USMC" and "Guadalcanal," for, he stated, "Nine out of 10 people don't know what 'Semper Fidelis' means."

Case 3

The attitude of another man, tattooed in prison, was as follows: "I was in prison for five months. Other fellows had tattoos. You didn't care because you were behind the eight-ball. It makes you look odd, though, once you are out, since lots of ex-cons have them." This man had "Good Luck" and "Hard Luck" on his hands, "Bill" (not his own name) on his lower arm, outside, and the initial "B" between his thumb and index finger (another site favored by the homosexual, according to Coureaud.)[8]

VII. Rorschach Correlations

In the Rorschach test, the individual reads into the multipotential ink blots figures which reveal his thoughts and feelings but, first of all, his basic attitudes and personal traits. It is quite possible that a similar process takes place if an individual chooses a design to be applied to his body as a tattoo. For this reason, it seemed profitable to review the Rorschach tests obtained on these patients in order to find out whether the characteristics of a patient's tattoos could be matched with his Rorschach responses.

The Rorschach records of 13 PD and 12 schizophrenics were reviewed. These records had been interpreted by members of the psychology staff, independently of this study, as part of the routine clinical work-up of these patients. The majority of the Ror-

schach records contained responses which correlated with the tattoo material. For brevity, however, only four case illustrations, two characteristic for each group, are presented here.

One schizophrenic, who had chosen, among other blatant tattoos, a large skull pierced by a dagger, showed on his Rorschach that, "Aggressive impulses surface readily and lacking adequate ego control find expression in motor activity. Numerous oral percepts were seen which in some instances reached cannibalistic proportions."

Another schizophrenic who had four symmetrically-placed tattoos on his arms gave only symmetrical responses in his Rorschach. For instance, on Card IX he responded with, "I'd say that was two chickens and four eggs."

A patient of the PD group had several unfinished tattoos and had inscribed a hidden nude with "Mother." His Rorschach record revealed that "He expends little effort and shows little drive for accomplishment. He has a psychosexual problem."

Another PD (Case 2 in the present paper), who had clarified his emblematic tattoo so that every one would understand its meaning, had also chosen as his last tattoo, placed in a secretive area, a nude inscribed with "Death Before Dishonor." Interpretation of his Rorschach record was as follows: "He is facile in adapting social situations to his own advantage. . . . He is preoccupied with female sexuality, apparently in an effort to demonstrate a masculine virile viewpoint, for there is strong evidence of sexual confusion and feminine identification."

VIII. Conclusion

Tattooed patients, diagnosed as "Personality Disorder" or "Schizophrenic Reaction"—admitted to the neuropsychiatric section of a 1,200-bed veterans hospital over a period of seven months—were studied, along with tattooed schizophrenics on the chronic wards of the hospital.

By investigating the tattoos as to number, quality, location, arrangement, and content, and the persons tattooed as to their backgrounds, circumstances of obtaining tattoos, and clinical history, it has been shown that, despite the many chance factors involved, choice and selection are not haphazard throughout. Striking differences, well-correlated with present-day psychopathological con-

cepts, distinguish the tattoos of the personality disorder patient from those of the schizophrenic.

The tattoo has been interpreted as an expression of personality structure. Man, capable of reflecting upon himself, can accept his body as it is, or, rejecting the natural state, modify and embellish it. In historical perspective, it can be seen that among ancient peoples tattooing was a vital aspect of group living. The tattoo was made part of the body for magical or social purposes. In similar vein, sailors of bygone days marked themselves after hazardous voyages.

In the hospital population, two attitudes became evident: that of the schizophrenics who, in their feelings about the tattoo, reiterate primitive attitudes as to its magical significance and potency and at the same time express their estrangement from the normal world; and that of the personality disorder patients, whose tattoos express inner conflicts and satisfy inner needs and, evaluated as a social phenomenon, signify another deviation from the mores of our culture.

Comparison of tattoo constellations and Rorschach responses suggests that the tattoo may be considered akin to a spontaneous projective test.

Allan Memorial Institute
1025 Pine Avenue West
Montreal, Canada
and
Veterans Administration Hospital
Lexington, Ky.

REFERENCES

1. Hambly, W. D.: The History of Tattooing and Its Significance with some Account of Other Forms of Corporal Marking. H. F. and A. Witherby. London. 1925.
2. Coureaud: Les tatouages actuels dans la marine; leur fréquence, leur signification. Ann. de Méd. Légale, 9:100-114, 1929.
3. Lander, J., and Kohn, H.: Tattooing among army selectees. Am. J. Psychol., 100:326-327, 1943.
4. Kramish, A.: Personal communication, May 1953.
5. Solowjewa, M. W.: Die Tätowierung der jugendlichen Vebrechern. Arch. f. Krimin., 87:214-219, 1930.
6. Sudomir, A., and Zeranskaia, P.: Die Psychologie der Tätowierung bei Verbrechern. Arch. f. Krimin., 85:14-22, 1929.

7. Parry, A.: Tattooing among prostitutes and perverts. Psychoan. Quart., 3:476-482, 1934.

8. American Psychiatric Association: Mental Disorders (Diagnostic and Statistical Manual). Washington. 1952.

9. Schachter, M., and Cotte, S.: Enquête médico-sociale sur un groupe de mineurs délinquants tatoués. Strasbourgh Méd., 109:309-311, 1949.

BIBLIOGRAPHY

Abramson, P. D.: Tattooing—a brief review of its history: pathology and methods of removal. New Orleans Med. and Surg. J., 84:191-194, 1931.

Cohen, M. J., et al.: Tattooing: Some medical and psychological aspects. Brit. J. Dermatol., 39:290-297, 1927.

DePina, L.: Tatuagens (Tattoo marks). Arch. Repart. Anthrop. Crim., Psical., Exp., Ident. Civ. Parte I, 147-156, 1931.

Herber, J.: Origine et signification des tatouages marocains. L'Anth. Op., 39:517-525, 1928.

Herber, J.: Tatouages curatifs au Maroc. Rev. d'Ethnog., 9:179-187, 1928.

Licurzi, A.: Tatuajes y cicatrices. Rev. Med. Leg. Jur. Med., 1:276-283, 1935.

Narat, J. K.: What price tattooing? Med. Rec., 148-150, 1936.

Pollak, O. J., and McKenna, E. C.: Tattooed psychotic patients. Am. J. Psychiat., 101: 673-674, 1945.

Schönfeld, W.: Dermatologische und Volkskundliche Nachlese zu Tätowierungen. Dermatologische Wochenschrift, 109:1255-1263, 1939.

Shie, M. D.: A study of tattooing and methods of its removal. J. A. M. A., 90:94-99, January 14, 1928.

Struder, J.: Grenzgebiete: Kann man aus dem Bildgut der tätowierten Gefangemen auf ihren Charakter und ihre Verbrechensart schliessen? Medizinische Welt., 9:1485-1489, 1935.

EDITORIAL COMMENT

SACRÉ MAL!

Hippocrates said he couldn't see anything sacred about having fits. The sacred disease, said he, was a disease like any other disease, and he didn't believe the gods had anything to do with it. His was decidedly a minority opinion. His contemporaries emphatically knew better. One had only to look at the Oracle of Delphi where the prophetess, convulsed in fits, spoke in wild words for the god. Men and women touched by the gods had been set apart by fits for as long as there was human memory.

The setting apart could be a consecration or a condemnation. The concept is one of the most ambivalent possible to man; the same idea covered devotion to the gods and damnation by them; often the word was the same. Contrast the use of *sacré* in French profanity with its dictionary and literary usage. Or consider our English "sacred." Doubters may consult Webster's unabridged dictionary where they will find that—besides meaning "holy" or "consecrated"—it has the identical double meaning it has in French, "accursed." Webster quotes the poet Alexander Pope to prove it and does not even label the usage obsolescent, although it would be difficult to find in more recent literature. For common descriptive purposes, we no longer call epilepsy sacred. Twenty-four hundred years late, the physician and the common man agree with Hippocrates that there is no garb of holiness about it. But in the other sense—the one our language has almost forgotten—epilepsy, in the common concept, remains sacred, that is "accursed." We are rid of the consecration of the epileptic to the heathen gods; it is rather shameful to reflect that we are not yet rid of the curse.

The ancient concept made sense at the dawn of our day. Man explained—as he still does—what he could not comprehend by what he believed he could comprehend. He could comprehend that men and animals were moved by something mysterious within them; we would call such a something a spirit; a god was a powerful spirit; and it was plain to the most simple-minded that when a person fell to the ground, foamed at the mouth, and thrashed in violent convulsions, he was moved by a very powerful spirit indeed.

Whether such a possessed man would be held consecrated or accursed, made a servant of the god or driven from his presence, might depend on the human element seen in specific time or place. He—along with others singularly but differently marked by the gods—might become a shaman, a priest-king, a medicine man, or a prophet. Or he might be sacrificed to the god who had marked him, or might be stoned from the community. Whichever his fate, honor or abhorrence, that he had been touched by divinity was never doubted.

One finds the lesser evil, like the greater evil of convulsions with which it is so often found, was also accepted as a mark of the god. In *petit mal,* loss of consciousness, a spirit wielding extraordinary powers plainly left the body to go about its own concerns—perhaps to commune with the god in his secret place—perhaps to manifest later the powers thus acquired through the greater evil, the *grand mal* of convulsions. Over and over again, one finds in the sacred tradition and sacred literature of the East, descriptions of phenomena which resemble petit mal.

When Saul of Tarsus fell to the ground in the face of a blinding light on the road to Damascus, to rise with a new name and a new destiny, he was marked by divinity. Those who took his experience to be the falling sickness (and for nearly 2,000 years this has been a very frequent assumption) considered it a mark of inspiration. Similarly, some have traced the mark of the sacred disease in the unknown writer described as John of Patmos who wrote the Apocalypse we call *Revelations;* and it was, for long, considered part of the evidence of that work's inspiration also. Outside our own culture, Mohammed is supposed by many to have been epileptic, although there is considerable doubt here; and there are many other religious leaders, small and great, who bore this recognizable mark of divinity.

There are other than religious figures among the world's leaders who are supposed to have been afflicted with epilepsy. Caesar was certainly an epileptic; and his disease was possibly traumatic in origin; Plutarch dates it from a period of warfare in Spain. So, too, if the extraordinary rages of Alexander the Great were epileptic in nature, as has often been supposed and as many clinicians would be inclined to credit, one can see possible trauma here too, for Alexander, like Caesar, was a general who was found in the

forefront of battle. There is no doubt that, at least in superstitious Persia, Alexander's uncontrollable rages were, like typical epilepsy, interpreted as manifestations of god-like qualities. Caesar's Roman troops probably did not consider his epilepsy a sign of his divinity, but they certainly would consider it a sign of divine favor. Superb strategists and tacticians as Alexander and Caesar both were, it would be interesting if one could know what proportion of their victories was due to military genius and what was due to the high morale of armies who believed they were being led by a demi-god and a man particularly favored by the gods.

Taking a hop, skip and jump through time, one finds the greatest figure in pre-Communist Russian history, Peter the Great, was an epileptic. Napoleon had fits; their nature is unknown, but it is a reasonable supposition that they were epileptic. It is another reasonable supposition, of course, that neither the great Czar Peter Alekseievitch nor the great Emperor of the French a century after him considered that fits were any mark of divine favor. To Peter and Napoleon alike, fits must have seemed annoying illnesses, as they would seem to anybody today.

By Napoleon's day, epilepsy had begun to fling away some of the aliases under which it used to travel. As *morbus comitialis,* epilepsy was the disorder by which the gods could break up the public assemblies of ancient Rome; a fit by a participant was an evil omen; and the *comitia* of the people were forced to adjourn with no further business—whether a vote on foreign affairs or the election of a magistrate. As *morbus sacer,* epilepsy was merely sacred; as *morbus divinus,* divine; as *morbus herculeus,* it was devoted to a particular god or half-god who was supposed to have been epileptic, although Hercules in a convulsion is no very familiar role. As *morbus magnus* and *morbus major,* epilepsy was "the great illness" and "the greater illness." As *morbus caducus,* epilepsy bore merely a descriptive title, "the falling sickness."

We think of epilepsy in descriptive terms today. We have made adjectives—in English medical terms—of the French *grand mal* and *petit mal,* big and little evil; and we speak of grand mal attacks and petit mal attacks to distinguish between fits and mere loss of consciousness. Epilepsy itself is a descriptive word; epilepsy is επιλημψια, a seizure. We are pretty well rid of terms which are full of affect in themselves; the affect—purely one of fear and

revulsion by now—has remained to attach itself to the essentially neutral and descriptive terms we use. In addition to a sufficiently unpleasant malady, the epileptic is a victim of legal and social restrictions; he lives amidst fear and reacts with shame.

If nobody today thinks that the epileptic has been singled out for divine favor, the evidence from Hercules to Napoleon, in legend and in fact, suggests that he has not been singled out for divine condemnation either. The epileptic can be—and frequently has been—an outstanding member of the human race. Peter the Great led Russia out of medieval Asia into modern Europe. Caesar brought order and stability into the chaotic affairs of the dying republic of Rome. Napoleon, tyrant or not, almost achieved something like a united Europe. St. Paul did not found the Christian religion, but he was responsible for its spread from an obscure, primitive and unorganized Hebrew group to the far corners of the Roman Empire; and he certainly was one of the founders of Christian theology.

Because the ill-founded idea is perennial that "madness" is in some way connected with genius, it should be stated in plain terms that there is no scientifically detectable connection between epilepsy and genius either. An epileptic is a person with a serious disorder. He may be a genius; or he may be mentally defective, as a person with cancer may be half-witted or a genius. Epilepsy and mental capacity do not seem to be related. Caesar, Peter the Great, St. Paul and Napoleon would all, presumably, have been as outstanding characters without their convulsions; and they would have been more comfortable ones. They also might have been more comfortable ones for their contemporaries to deal with; the victim of epilepsy, like the victim of some other disorders, may be inclined (and environmental reaction to his disease would be adequate explanation) toward more than ordinary misanthropy.

We have tended, however, to treat the epileptic, not like a sick person who may be bright or stupid, but like a person whose intellect is impaired by his affliction, who is incompetent to make his own way in a competitive society, and who is in need of guardianship, if not of custodial care. Further, we have often loaded him with extra legal and social disabilities. His right to drive an automobile is limited on lines which modern medical authority has doubts about—though the necessity for proper limitation is not

disputed. His right to marry is often abridged; his right to have children may be denied by sterilization. His ability to find and hold a job is limited by employers' fears of high accident risks and of consequent liability, and by the reluctance of fellow-employees to work with people who have a loathsome and greatly feared disorder.

This treatment of epilepsy is age-old. In the process of looking at the epileptic as a person set apart, society has ostracized the epileptic even more often than it has honored him. The epileptic who was not devoted to the gods as a priest or a prophet, or who was not otherwise so marked that all men could recognize his disorder as a sign of divine favor, was an object of fright and disgust. Where seizures could not be attributed to possession by a god, they were plainly cases of possession by a devil. When Jesus healed the epileptic boy, he commanded the "unclean spirit" to leave him. The boy was one of the afflicted, not one of the consecrated.

Today's epileptic has only the mark of affliction. And his epilepsy is not accepted, even today, as an ordinary affliction. It is difficult, as workers with the mentally ill know, not to fear persons who are not in control of themselves, unless of course one can believe them divinely inspired. Society's treatment of the epileptic today is largely the result of that fear of the uncontrolled. It is coupled with legislative and social restrictions based on the medicine of an earlier day. Much of the present-day fear is senseless in the light of modern knowledge of the etiology and treatment of epilepsy; many present-day restrictions do not make too much sense in the light of that same modern medical knowledge. Today's general attitude toward this affliction is largely unjustified and unjustifiable.

When medicine began to emerge from the twilight, it discarded the idea that epilepsy was possession by a demon, along with such other ideas as that the moon caused lunacy and that many otherwise unexplained sudden illnesses and deaths were brought about by witchcraft and wizardry. It is the well-known principle of parsimony, when the explanation of some phenomenon appears in doubt, to accept what seems to be the simplest and most reasonable. This can lead to some astonishingly wrong conclusions like the acceptance—as the simplest and most reasonable explanation of cosmic phenomena—of the geocentric theory of Hipparchus and Ptolemy,

with the sun revolving around the earth. In the case of epilepsy, the principle of parsimony led to the astonishingly wrong conclusion that epilepsy was a simple problem of inheritance. An ancestor had epilepsy, therefore his descendants have it.

Epilepsy came out of superstition into the field of science at an unfortunate period. Traumatic epilepsy was soon understood to result from brain injury. But "idiopathic," or "cryptogenic" epilepsy had no obvious exogenous origin. Human genetics was in a formative state. Some of the simpler inheritance mechanisms became generally known—the inheritance of red-green color blindness, for example. Other relationships were generally accepted, though mistakenly. Galton was supposed to have demonstrated conclusively the inheritance of "genius," and there was considerable justification for his contentions, enough for his work still to be recognized as a monument of scientific endeavor, although he was mistaken in many details and in numerous conclusions. The Jukes—a folklore family created with all the innocence of Parson Weems writing of Washington and the cherry tree—were welcomed into eugenic circles where they were not recognized as creatures of science fiction and were adduced to prove inheritance of every imaginable objectionable mental and social trait, including numbers of acquired characteristics. They and the Kallikaks, of similar dubious standing, provided case material for generations of eugenicists who aimed to breed undesirable qualities out of the race by prohibiting and preventing "undesirables" from marrying or having children.

The ghosts of these synthetic disreputables still walk. Juke and Kallikak statistics, for instance, are solemnly cited in R. B. Cattell's otherwise excellent textbook, *General Psychology,* published in 1941; and one fears they may continue to appear in sociological and psychological writings for many years to come. The eugenicists took this shaky foundation and built a strong and logical structure to restrict human propagation to the fit—by using the forces of social pressure and the law. It was like a paranoic elaboration, sound reasoning from false premises. Those false premises were: misunderstanding of how human qualities held to be desirable are inherited, and misrepresentation (concededly with the best intent) of how bad ones are. Primary targets of the eugenic forces were the "insane, epileptic and feeble-minded." Seven-

teen states in this country prohibit the marriage of epileptics; 18 have "eugenic"sterilization laws that are applicable to epileptics.

The proportion of epilepsy diagnosed as "essential," "genuine," "idiopathic" or "cryptogenic" has been decreasing yearly as larger and larger numbers of cases have been found to be symptomatic, caused by such things as brain tumor, syphilis or arteriosclerosis, besides head traumata. In the cases still ascribed to heredity, the mechanisms are not the simple ones the eugenicists supposed. Epilepsy as such is no more inheritable than "insanity" as such, although epileptologists agree that factors predisposing to it are probably inherited as recessives. So are predisposing factors to many other diseases which are not considered barriers to marriage and reproduction. Insofar as they apply to epileptics, the state laws prohibiting marriage or authorizing sterilization are ill-begotten offspring of misinformation and superstitious fear, fathering, in their turn, more shame, fear and furtiveness.

Epilepsy is a disease to be named only in whispers—as tuberculosis once was. It is a question if there is not more furtiveness, secrecy and fear today about epilepsy than about syphilis or gonorrhea. The mental health and mental hygiene movements, as well as scientists in the public health and psychiatric fields, have attempted in recent years to do some intensive educational work against epilepsy. There was a notable pamphlet, circulated a few years ago for general reading, noting that the ghost of epilepsy was "out of the closet," that epilepsy was no longer a stigma calling for fear and shame but an ordinary medical condition calling for medical treatment. A special committee on epilepsy legislation, formed by the American League Against Epilepsy, has now taken up the fight against the social and legal disabilities at present invoked against epileptics. Its report, *Epilepsy and the Law: A Proposal for Legal Reform in the Light of Medical Progress,** is a scholarly and thoroughly-documented presentation of 93 mimeographed pages, drawn up by a 10-member committee—including seven neurologists or epileptologists, a legal adviser and the directors of two societies organized to fight epilepsy. It is a worthy document and has been drawn on freely for some, but by no means all, of the data discussed here; it is the sort of thing all workers

*Special Committee on Epilepsy Legislation of the American League Against Epilepsy. Howard D. Fabing, M. D. (president, American Academy of Neurology), chairman, 2314 Auburn Avenue, Cincinnati 19, Ohio.

for mental health might be glad to see presented in more permanent form and circulated much more widely.

There will be considerable differences of opinion among specialists concerning some features of this *Proposal,* and among administrators and enforcement officers of the law, and among those charged with the institutional care and treatment of epileptics. There will be substantially unanimous agreement, one may believe, with the aim to repeal laws prohibiting marriage and authorizing sterilization of epileptics, in the states where those laws exist; New York is not one of them. There will be unanimous support of all informed persons for the educational campaign to persuade employers that epileptics are employable people and may be extremely valuable workers in jobs for which they are suited. There will be general sympathy for efforts to see if laws governing compensation for injuries cannot be amended, framed or interpreted so that employers will not fear to hire epileptics because of possible higher costs. This is a matter for legal and insurance experts and one on which medical specialists are hardly qualified to speak—beyond their informed testimony that an epileptic whose seizures are controlled by medication can do most things safely that a non-epileptic can do safely and that there are no reasons why such persons' performances should not be as satisfactory as those of non-handicapped persons with similar physical and mental capacities.

The renewal of public effort to remove social stigma and economic penalty from the epileptic will, of course, have the complete support of all who have any interest in general mental health. The psychiatrist knows that this task has not been easy in the more general field of the psychoses and of those odd and eccentric folk who are diagnosed in the psychoneuroses. How much harder it is in the case of persons who may fall to the ground, convulse spasmodically and foam at the mouth, any specialist in public relations should be able to testify. The effort of the present committee to remove public stigma, general fear and private shame from the burden of the epileptic is one in which all persons of good conscience and good will can join.

The question of the automobile is a transport animal of another color. Forty-seven of the 48 states have laws prohibiting or limiting the right of an epileptic or former epileptic to drive an automobile. New York has a regulation that a person must have been free

from epileptic seizures for two years after withdrawal of medication before he can be licensed to drive an automobile. Epileptologists who have been criticizing current practices would change the New York and similar regulations to permit epileptics who are free from convulsions under medication to drive as well; and they would make the preliminary period shorter. The League Against Epilepsy committee, for example, would require freedom from convulsions for a year but would permit driving at the end of that year if there is control by medication.

The general problem is, of course, a question for the motor vehicle authorities, the police and the medical specialists concerned. And in some states, there is the additional matter of law. Present regulations, the epileptologists contend, are based on medical theory of half a century ago—before present anti-convulsants and present treatment methods were developed. The present aim is to allow epileptics who can drive safely to get licenses to drive. Contrariwise and from the angle of public safety, it is more important to keep epileptics who cannot drive safely from driving at all. A couple of hideous accidents, both in New York State, point to the need. A driver lost control of his car, apparently during an epileptic seizure, drove into a group of people, killed one and injured nine. Another, apparently an epileptic in a "blackout" attack, killed four children and crippled a fifth seriously when he froze to the wheel, drove at high speed on a sidewalk and finally crashed so violently into the wall of a store that the whole car came to a stop inside the building.

It seems to be at least as urgent for public safety as for medicine to re-examine the whole question of allowing epileptics to drive. Surveys and statistical studies indicate that there are some 75,000 persons in the State of New York who have some form of convulsive disorder. It must be admitted that large numbers of these are driving automobiles (illegally, of course) and attracting practically no attention. The horrible accidents that result now and then are not generally recognized by the public as caused by epilepsy. If they were, there would be pressure, based on superstitious fear and aggression, to prevent anybody who had ever had a fit from driving—ever!

In today's North America, driving an automobile—except in such places as New York City—may be socially desirable or economi-

cally necessary. All other conditions being equal, the person known to be epileptic has difficulty enough to find and hold a job. If he cannot transport himself to it, he may lose it as soon as he finds it. That is enough to account for thousands of epileptics now driving without ever having sought medical attention or reporting their conditions.

There are other modifying factors which influence the total risk and go some way toward explaining why more accidents are not caused by epileptics who drive illegally. Convulsions tend to happen at night, or during periods of relaxed attention, or under the influence of alcohol, or under the influence of tremendous stress or great fatigue. An epileptic driver who has managed to avoid accident or injury is rather likely to continue to do so—even though he has attacks—for his driving will conform, perhaps unconsciously, to his seizure-free periods. An epileptic who has been in an accident has not brought his driving to conform to attack-free periods; and he is likely to be a much greater menace on the road than the epileptic who has always driven safely.

This situation is no more desirable and no fitter to be endured than dry era bootlegging. Like the Eighteenth Amendment, the regulations do not control the situation. The remedy is not necessarily to make more drastic regulations, as was tried unsuccessfully during prohibition, or to repeal the regulations, which was finally done with the dry laws. The League Against Epilepsy's committee is hunting—the way Ko-Ko went hunting for punishment to fit the crime—for regulations which will meet the need for public protection and, at the same time, fit the situation.

The law in relation to epilepsy reminds the committee of the verse about the poor little dachshund who was so long that when he felt sad he might still be wagging his tail—the feeling hadn't reached his tail in time for an appropriate reaction. The medical treatment of epilepsy and the facts now known about epilepsy are 50 years or so in advance of social and legal attitudes. (This is no news to psychiatrists, who can report the distance between their own dachshund's head and tail is even longer.) The committee wants laws, regulations and procedures fitted to modern medical concepts.

The committee wants epileptics who have had no seizures for a year to be allowed to drive while their seizures are under medical

control. If the requirement of medical treatment can be generally enforced, it might have the effect of making seizure-free, and extending legal protection to, thousands of secret epileptics who now drive illegally, but who could then, with treatment, drive both legally and safely. This is a statement of an end that is desirable, not necessarily practical. It is a situation much to be wished, but whether the committee's specific proposals will help wishes become Utopias is a separate problem. The burden of proof here is on medical specialists. The epileptologists must convince law enforcement officers, administrators and perhaps legislators, that the proposals they sponsor are safe and enforceable. And, although all of us sometimes wish such action were possible, even doctors cannot endorse without qualification a purely medical view in a field that also involves problems of administration, of engineering, and of public safety—at the least.

Finally, the medical problem involves far more than epileptology. Convulsions may occur in other than epileptic conditions; the committee lists hypoglycemia, the carotid sinus syndrome, hypertensive encephalopathy and others. There are many other disorders making driving unsafe, among which, it ought to be said, are various cardiac conditions. An automobile victim can be as thoroughly dead, if killed by an unconscious diabetic with insulin shock, or a suddenly deceased victim of cardiac disease, as he would be if the driver were having a grand mal epileptic seizure. Restrictions then, instead of being applied to epilepsy alone, and applied on the basis of what doctors knew at the turn of the century, should—if there is any practical way to bring it about—be applied with equal steps to other conditions that might cause impaired driving control. This proposal would involve a great deal of preliminary study and might extend medical responsibility to difficult fields. Failure of vision is as dangerous a condition as any and has not even been mentioned here.

Another situation where emphatic general approval is in order and specific endorsements might be reserved is the question of insuring that an employer will not risk financial loss by hiring epileptics. The league committee doubts if the risk is serious now, but seeks to reassure him. The league wants the injured epileptic to be entitled to a workman's compensation award based on total injuries (handicaps); but what is known as a "second injury fund,"

already established in most states, would pay the employer the difference between compensation for the first handicap and the total compensation. A situation that denies the epileptic the opportunity to work at jobs he could hold satisfactorily is hardly just and charitable. But the working out of a remedy is a matter involving changes in a law which would have to be amended with considerable care—and amended by masters of that great mathematical mystery, insurance statistics. Once that is done, psychiatry can add its every effort to the attempts mental health workers will make to educate the public to see epileptics as ill, not accursed, people.

Like Calvin Coolidge's preacher, who was "agin sin," psychiatry can fight valiantly and vigorously "agin" injustice and "agin" human lack of charity; but one had better leave the details in nonmedical matters to experts in related fields and confine psychiatric attention to the medical. The epileptics in New York State are in the particular charge of the New York State Department of Mental Hygiene and are an object of deep concern and sympathy to all the state's psychiatrists. Anything that can be done to alleviate their situation without endangering other people will have firm support.

But no psychiatrist can banish from his mind the painful fact that a flickering of consciousness (a mere flickering, not even a split-second interruption) while one is driving at high speed in heavy traffic has some spine-tingling possibilities. With that thought to set a limit for reform, psychiatry can commend the league committee's objectives without any reservation at all, and its proposals with a minimum of almost self-evident reservations. New developments in psychiatric care and treatment suggest that the time may come when psychiatrists can ask a return favor of the epileptologists.

BOOK REVIEWS

Current Problems in Psychiatric Diagnosis. Paul H. Hoch, M. D., and Joseph Zubin, Ph.D., editors. 291 pages including index. Cloth. Grune & Stratton. New York. 1953. Price $5.50.

"Current Problems in Psychiatric Diagnosis" was the topic of the forty-first annual meeting of the American Psychopathological Association in 1951. Drs. Hoch and Zubin have edited an exceedingly useful collection of the papers then read, together with some of the discussions. Some notable work by excellent authorities is presented: Stainbrook discussing historical determinants of contemporary thinking; Diethelm, the fallacy of the concept of psychosis; and Cameron presenting a theory of diagnosis.

This volume is, as a whole, an unusually good selection of papers; virtually all of them are thought-provoking, and a number should be of considerable use to the clinician: Ackerman, on psychiatric disorders in children; Jervis, on trends in the study of mental deficiency and Shick, on the etiological aspects of psychosomatic conditions, for examples. The viewpoints presented in this book cross the boundary lines of the current psychiatric theories; and the volume should therefore be appropriate in the library of any active practitioner.

Transference: Its Meaning and Function in Psychoanalytic Therapy. By Benjamin Holstein, M. D. 206 pages. Cloth. Grune & Stratton. New York. 1954. Price $5.00.

This essay in socio-culturally oriented, transference psychoanalysis follows the discipline of Harry Stack Sullivan, Clara Thompson, etc. Freudian concepts are claimed to be based on hypnotic roots. Freud is said to have emphasized supersuggestion in his "authoritarian" approach. Freudian metapsychology is termed arbitrary. Also "Freud had a conception of why man got into trouble and the only way he could cure his patients was for them to accept the rightness of his conception."

Amplification of transference phenomena, transference and countertransference, distortions in interpersonal relations are emphasized in Wolstein's work in a "pluralistic approach." The personality and responses of the analyst are important in helping the patient work his way through. Experiences besides childhood ones and future goals are involved in "the interpenetration of past and future in the present."

Criticism of classical psychoanalysis is unnecessarily harsh in this volume. New ideas are built only on the ruins of others. Much repetitiveness is covered by fluent phraseology. There is much in the book, however, to encourage thought.

The Parietal Lobes. By MACDONALD CRITCHLEY. 480 pages. Cloth. Williams & Wilkins. Baltimore. 1953. Price $13.50.

Stereotyped thinking in neurophysiology is repeatedly proved foolhardy in this volume. Arbitrary anatomical subdivisions often mean little functionally. Constructional and spatial apraxia, time sense loss as well as sensory loss are noted in parietal lesions. A degree of sidedness exists. These and other clinical disorders are discussed. An extensive investigation into sensory epilepsy, cortical sensory loss, Gerstmann's syndrome, and disorders of body image are presented.

This is an admirable survey of current thinking in parietal lobe anatomy, physiology and pathology—but not light reading by any means.

Neurotic Anxiety. By CHARLEEN SCHWARTZ. 120 pages. Cloth. Sheed & Ward. New York. 1954. Price $2.75.

As part of her doctoral thesis, the author, a practicing analyst, has written a critique on Freud's interpretation of the dynamics of anxiety and guilt.

After comparing the psychology of Freud with that of St. Thomas, the author analyzes Freud's interpretations of neurotic symptoms and explains her reasons for disagreeing.

She believes that the primary component of a neurotic's conflict is the rational libido, the punitive libido, the conscience or the super-ego (whichever term one wishes to use) and not the animal libido or the id. She holds that analysts oversimplify the mechanism of repression, believing that it takes place spontaneously and unconsciously. "However, granted that the very act of repression as such is unconsciously generated at the moment of repression, we may still ask whether the acts leading to the moment of repression are unconsciously generated too."

"Thus for Freud all neurosis begins with the destruction of the Oedipus complex, and this destruction is brought about by the fear of castration. And yet, as Freud himself realizes, the fear of castration does not distinguish neurotic from normal anxiety. For this same fear of castration might just as well lead to a suppression of the Oedipal desires (normal resolution) as to a repression (neurotic resolution) . . . Freud, then, cannot tell us why the destruction is complete (suppressed) in normal cases and incomplete (repressed) in pathological ones. . . .

"Just as Freud could not account for neurotic anxiety because he never looked to the rational, he cannot account for guilt for the same reason. . . . But in our view his misconception of guilt is the weakest point in his entire psychoanalytic theory, and it is the one place where we were not able to find at least some argument in his defense. . . ." In the author's opinion, guilt is the focal point in the neuroses.

The Psychology and Psychotherapy of Otto Rank. By FAY B. KARPF. 129 pages. Cloth. Philosophical Library. New York. 1953. Price $3.00.

The ascendency of Freudian analysis has overshadowed the significant contributions of some of Freud's early collaborators and disciples. This has been especially so with Otto Rank, perhaps the least widely known of the three early "deviationists," but perhaps the most influential today. Recent years have seen the slow but firm growth of his influence, in "non-directive" therapy, and in such social work as that of the group led by Jessie Taft. The prestige of his views derives in part from his broad and enlightened appreciation of the cultural matrix, within which the individual evolves—which resulted in his conception of the "functional interrelation of the individual and the social in behavior." Freud, and to a lesser extent Jung and Adler, held to more rigid biological orientations and to belief in direct determination, a mechanism which in recent years has been increasingly unacceptable to many. Another factor which has contributed to Rank's growing influence, remarks the author, is his emphasis upon the expression of the "positive, active, integrative and creative aspects of personality expression . . . in the sense of active self-expression and control of adjustment" as opposed to what he considered to be Freud's pessimistic, repressive attitude, which Rank termed "a philosophy of despair in its emphasis on blind force." "The individual," states Rank, "does not merely adapt himself passively to his environment; he also controls, directs, and molds it."

In the early '20's Rank began to break away from the original Freudian inner circle after contributing some 20 years of devoted and original work to the psychoanalytic movement. His fundamental tenets, Karpf indicates, were: (1) Rank's emphasis on the "relationship" and "the emotional dynamics of the analytic situation as an essential therapeutic agent," (2) his emphasis more "specifically, on 'experiencing,' in analytic situations as against learning in the intellectual sense, recall, making conscious, giving insight by theoretical interpretation, etc.," (3) his concept of "patient-centered" rather than "therapist-centered" therapy.

This admirable, concisely-written little book traces the fundamental philosophy of Rank and contrasts it with those of Freud, Adler and Jung. The value of this work is enhanced by the author's years of personal acquaintance and work with Rank, who actually assisted in the preparation of part of the manuscript. A brief essay dealing with Rank's association with, and departure from, Freud is included. In general, this is an excellent general summary of Rank's viewpoint and is heartily recommended to both graduate students and professional readers.

Lawless Youth: A Psychiatric Study of the Causes and Prevention of Adolescent Crime. By E. A. STEPHENS, M. D. ix and 315 pages. Cloth. Pageant Press. New York. 1953. Price $3.50.

Dr. E. A. Stephens, author of *Lawless Youth*, has specialized in correctional psychiatry in California. In this psychiatric study of the causes and prevention of adolescent crime, he summarizes his observations and findings, his opinions and conclusions after examining clinically some 1,000 antisocial youths. Because the volume is thus based on sufficient, documented data, it should be useful to those interested in working with the youthful transgressor who has not yet become a career criminal.

The author deals with the meaning of crime, pre-delinquent symptoms, feelings of guilt, the compulsive criminal, race prejudice as a cause of crime, the psychotic criminal, and the prevention of crime. In addition to selected tables of data, a glossary of psychiatric terms is also informative and useful. He cites case histories. Lack of maternal affection, parental reluctance to discuss sex, and inability to devote sufficient time to the problems confronting children are matters analyzed with insight by the author.

The Philosophy of Psychiatry. By HAROLD PALMER, M. D. 70 pages including index. Cloth. Philosophical Library. New York. 1952. Price $2.75.

In this tightly and logically organized monograph, the author states his purpose as a "contribution towards the establishment of a theory and practice of psychiatry which are not only communicable to other scholars, but may serve as a contribution towards a science of ecology." The author's attitude is that of a finalist, looking more for a direction in growth toward a goal, than for a process of evolution and adjustment to an environment, a position he takes in spite of a basic assumption that the subject matter of psychiatry is the self. "What is most important is that we should avoid esoteric architectural schemata in relation to these various aspects of the 'self' and keep well in view the self-evident proposition that 'John Smith' can only be thought of in the psychiatric realm of discourse in the same manner as he thinks about his own 'self' and credit him with this entity." However, "Personality may be defined as 'that aspect of human beings whereby we are recognized by others,' that is 'that which constitutes recognizability.'"

It is an everyday temptation to constrict a subject matter for the benefit of clarity, understanding, or communicability. Psychiatry lends itself to being molded less than any other scientific subject matter. To the reviewer this book is another proof of the impossibility of becoming dogmatic in science.

Doctors, People and Government. By JAMES HOWARD MEANS, M. D. 197 pages. Cloth. Little, Brown. Boston. 1953. Price $3.50.

One often hears people say that if the doctors do not make decisions relative to medicine and to the cost of medical care, the politicians will make the decisions for them.

Dr. Means, former chief of medicine at Massachusetts General Hospital and now with the Massachusetts Institute of Technology, has these thoughts in mind and does not hesitate to express himself. He holds that the American people are not getting adequate medical care at the price they can afford; and that the America people must interest themselves in the affairs of medicine if they want better medical service.

Dr. Means is well acquainted with the problems of medical education, the shortage of doctors, the era of specialization, the deficiencies in hospital facilities, yet he believes that better medical care can be provided if the leaders of organized medicine will give up their fears of "socialized medicine," and help communities and government establish a sound policy in the regulation of adequate and reasonable medical service. He does not recommend the type of "socialized medicine" practised in England, but he does believe parts of that system have merit.

Dr. Means recommends ". . . a threefold attack from a very broad base embodying government, private, and community elements. The Federal medical edifice must obviously be put in order [and by this he refers particularly to the Veterans Administration] but to cooperate with it, so too must that of nongovernmental medicine . . . they must first develop a method by which they can cooperate fully with one another. . . ."

At the community level he recommends the co-operative efforts of "the medical school, a teaching hospital, a comprehensive, prepayment plan, a home care plan, and an organization of doctors for group practice on a salaried basis. . . . Preventive services should be provided as well as curative, Government aid to both education and research is indispensable if progress is to continue . . . the challenge to the American people . . . is to bring about a state of affairs in which voluntary effort is unified in such a fashion that it can work smoothly with a government edifice which also has been well integrated. To reach this goal, the divisive action of special loyalties must be mastered."

Doctors, People and Government is a very provocative book and should be studied by all doctors.

Let Them Eat Bullets. By HOWARD SCHOENFELD. 157 pages. Paper. Fawcett. New York. 1954. Price 25 cents.

This typical story of a hard-drinking private detective is devoid of psychological interest.

Age and Achievement. By HARVEY C. LEHMAN. 359 pages. Cloth. Princeton University Press. Princeton, N. J. 1953. Price $7.50.

The task to which the author has set himself is "to set forth the relationship between the chronological age and outstanding performances" of a wide selection of professionals, ranging from mathematicians and physicists to politicians and athletes. Over the 20 years during which the findings of this book were compiled, an impressive array of statistics was accumulated. Lewis Terman, in a brief preface, remarks that, "Lehman's work deserves to be ranked among the most important contributions that have thus far been made to the literature of genius."

Considerable care and patient research have gone into the preparation of the materials and the scope of the sample of individuals in each profession analyzed is broad, though the topic is narrow and will be of interest to comparatively few, those concerned with the development of genius, and with the ages at which the most creative and productive work is contributed in each profession. This book should prove to be of particular value for reference.

Bright Children. A Guide for Parents. By NORMA E. CUTTS, Ph.D., and NICHOLAS MOSELEY, Ph. D. IX and 238 pages. Cloth. Putnam's. New York. 1953. Price $3.50.

This book is designed to help parents bring up bright children to make the most of their intelligence—at home, in school and college, and in useful, successful living. It deals primarily with the upper 10 per cent of children (those whose IQ's are over 120).

There are chapters on measuring intelligence, mental hygiene, discipline, early schooling, difficulties with marks and homework, and suggested readings for parents.

The writers, both educational psychologists, cite examples from experimental studies and investigations, but the most appealing feature of the book is the collection of statements and essays by the bright children themselves.

Theoretical Anthropology. By DAVID BIDNEY. 506 pages including index. Cloth. Columbia University Press. New York. 1953. Price $8.50.

This is an analysis of a social science by a philosopher and, as such, is of importance to all social sciences including psychiatry. It is a piece of interdisciplinary research and is consequently exceedingly difficult to appraise. The ground Bidney covers ranges from Boaz and Buffon to Freud, Jung and Róheim. Among many other matters, there is informative, stimulating and important material here for anybody concerned with personality theory.

Man the Maker: A Study of Man's Mental Evolution. By G. N. M. Tyrrell. 311 pages. Cloth. Dutton. New York. 1952. Price $3.75.

The subtitle of Tyrrell's book is somewhat misleading in its implicit inclusiveness, for, though interspersing his paragraphs with quotations which range temporally from the pre-Socratic philosophers to scientists and philosophers of the present century, his main argument is against the claim to objectivity made, purportedly, by the scientist. Underlying this argument appears a bias toward higher "intuitive powers of the mind," similar to the kind that Rhine reports in his extrasensory studies. This bias is further suggested by the flyleaf of the book which bears the comment that *Man the Maker* is a book "which should encourage and hearten those who are fighting against the gross materialism . . . so deplorably present in our social and intellectual life."

The reviewer feels that Tyrrell's treatment of the inherent subjectivity in scientific investigation is, however, too belabored. For since the early cries of alarm against trusting uncritically the products of our sensory process (pioneered by the English Empiricists, and developed to a much more sophisticated level by the Logical Positivists) scientists have grown increasingly wary of their data. But it has not been sufficiently pointed out, as the author does point out, that our theorizing may lead us to ignore important data which are contradictory to our pre-established views, and that thus, we retard scientific understanding. In general, the author has presented a stimulating, and thought-provoking book.

Phantasy in Childhood. By Audrey Davidson and Judith Fay. VIII and 188 pages. Cloth. Philosophical Library. New York. 1952. Price $4.75.

This book is intended for the individual with a psychoanalytic orientation, and is based generally on the work and theories of Melanie Klein.

The authors, a psychoanalyst and a qualified Froebel teacher, have taken some of these theories and applied them to the behavior of children. They are particularly interested in describing the presence and nature of unconscious fantasy in a child's behavior.

Numerous case studies under a variety of conditions are presented. The presentation, however, is somewhat chaotic and the style confusing.

Tropic of Doubt. By Susanne McConnaughey. 254 pages. Cloth. Westminster. Philadelphia. 1953. Price $3.50.

A poor novel in an interesting setting: Tahiti in 1796. The story is reconstructed from *Transactions of the Missionary Society*, London, 1804. The tale lacks psychological substrata for its characters. The central figure is a skilled unconscious trouble-maker; the reader is left to himself even to guess at it.

How to Use Hypnosis. By Dr. David F. Tracy. 160 pages including 24 photographs. Cloth. Sterling. New York. 1952. Price $2.50.

Tracy, a psychologist writing for the lay person, claims that while psychoanalysis "cures only conditions of mental origin, hypnosis can also correct physical disturbances." He advocates that readers cultivate the art of hypnotism to attain complete self-confidence and "irresistible personal magnetism." He feels that when a child begins to discriminate, he is starting to apply positive and negative autosuggestion, allowing certain ideas to filter into his unconscious, and that "sick thoughts" can be removed from the unconscious by substituting healthy suggestions. Some medical misstatements exist—such as that milk in a baby's stomach may be curdled by loud noises.

Tracy describes four techniques for producing the hypnotic state, in the manner in which doctors may show lay people how to inject insulin. The book might appeal to highly suggestible, insecure persons—and might be dangerous in their hands.

The Hidden You: What You Are and What to Do About It. By Mabel Elsworth Todd. 248 pages. Cloth. Exposition Press. New York. 1953. Price $3.00.

The Hidden You, by Mabel Elsworth Todd, is a philosophy of living, in which Miss Todd deals rather interestingly with psychological theories about the intermarriage of mind and body. The book takes up human tensions and strains, body patterns, and adaptation to environment, and gives a thoughtful discussion of man as an organism. At times, it becomes too speculative, too metaphysical—especially when she concerns herself with "the association of the physical and the mental" in the lives of people, and "of life, unity, eternity, motion" (Chapters VIII, XV, XXII). *The Hidden You* is worth reading for affording still another viewpoint on the psychological processes of living in our contemporary world.

The Little Stockade. By Natalie Anderson Scott. 254 pages. Cloth. Dutton. New York. 1954. Price $3.50.

In this story of a man's voyeuristic curiosity about cheap big-city prostitution, Miss Scott presents a naïve and otherwise unbelievable character. The other figures are correspondingly unreal; the book lacks anything resembling psychological substance; and the story as a whole is adolescent.

Cry Out of the Depths. By Georges Duhamel. 213 pages. Cloth. Little, Brown. Boston. 1953. Price $3.50.

A French writer of some distinction attempts the picture of a collaborationist, but his book is cold, unconvincing, and uses guilt in a purely schematic way. The psychological interconnections are totally missing.

Giant Business: Threat to Democracy. By T. K. Quinn. 321 pages. Cloth. Exposition Press. New York. 1953. Price $3.75.

This combined autobiography, economic treatise, and philosophical dissertation illustrates one man's viewpoint in the field of economic and social psychology. The author, formerly ranking vice-president of General Electric, draws on his experience to explain why he broke away from that corporation to become an enemy of gigantism in business and a leading proponent of small business as the expression of true democracy in the national economy. Mr. Quinn has been president of an advertising agency, director general of the government's war production drive, and president of his own industrial management company. His observations about the stifling influence big business can have on employees and on general business initiative make for thoughtful reading, even though the basic theme is reiterated in dozens of passages. Mr. Quinn feels that business concentration must be halted if we are to save our democratic heritage. No matter what the reader's beliefs on this subject may be, or no matter what his field of psychological specialization may be, this book will surely provoke some basic thinking about a weighty problem.

Mental Health in the Home. By Laurence Spurgeon McLeod. 243 pages. Cloth. Bookman. New York. 1953. Price $3.50.

Dr. McLeod begins his book by discussing the weighty problem of "What is mental health?" and, having in nine pages disposed of that subject to his satisfaction, continues for the following 234 pages to cover a variety of material. He begins with child development, races through that phase with its numerous ramifications to adolescence, and then takes up dynamics. Religion is dealt with in 16 pages, and a single chapter is devoted to "How to stay happily married." Following this, the author gives 10 rules which he calls the "Big Ten of Mental Health." Follow these, and we will be happy, well-adjusted individuals. To tell non-professionals that all is so simple is a serious error.

This book was written primarily for the general public; and the chief fault, as far as this reviewer is concerned, is that Dr. McLeod has tried in limited space to compass everything.

The Juggler of Notre Dame. By Mary Ellis Todd. 40 pages with 18 illustrations. Cloth. Whittlesey House (McGraw-Hill). New York. 1954. Price $2.00.

In 17 pages, an old, old story is told. It is that of John, the juggler, and his quest of service to Mary, mother of Jesus. His success lies in his juggling, and herein is the thesis of this sub-teen book. It is the old advice, "Do what *you* are capable of doing," and is an excellent example of good mental hygiene.

Individual and Community Health. By WILLIAM W. STILES, M. D., M. P. H. 492 pages. Cloth. Blakiston. New York. 1953. Price $6.00.

Printed in double column, this textbook is easy to read and contains an adequate amount of information with many listings of additional references, covering all phases of public health and personal hygiene. It is profusely illustrated, but some of the drawings are rather crude and some of the illustrations outdated.

As would be expected in a text so comprehensive, there are many conventional stereotyped attitudes. There is a considerable tendency toward moralizing; and, in the discussion of adolescent sexual problems, the emphasis is on venereal disease and unwanted babies. Relatively more space is devoted to a description of the horrors of venereal disease and alcoholism than to giving a real understanding of their social significance.

Particularly objectionable is the statement that vasectomy "is the preferred method of inducing permanent birth control in couples who need to limit their families." In reference to salpingectomy the statement is made that "this procedure does not affect her physical or emotional life beyond rendering her sterile." Korsakoff's psychosis is attributed to alcoholism. Alfred Adler is given singular credit for having "extended and developed" Freud's concepts.

The Permanent Revolution in Science. By RICHARD L. SCHANCK. 112 pages including index. Cloth. Philosophical Library. New York. 1954. Price $3.00.

The Permanent Revolution in Science is a presentation of a scientific methodology and point of view in which philosophy concerns itself with methodology rather than speculation about scientific interrelationships. Schanck bases this short discussion on the philosophical ideas of Edgar Singer's "experimentalism." Schanck's permanent revolution is the rebellion of scientists against the application of "the most mechanical mechanisms" to social science in general, to psychology and finally to science as a whole. He uses, as examples of misapplying mechanical mechanisms, attacks from scientific sources on Marx and Freud. These are vivid and valid illustrations, regardless of one's personal point of view—from this book it would be difficult to say whether Schanck follows Marx to his conclusions; he is concerned with method. He sees modern science as having been affected to the point of revolution by a methodology concerned with trends and evaluation, rather than strict mechanization—but without discarding theories of mechanism where they are necessary, applicable or useful. This little text is worth the attention of all social scientists; its viewpoint should be productive of profitable thought.

Psychiatry and Military Manpower Policy. A Reappraisal of the Experience in World War II. By ELI GINZBERG, JOHN L. HERMA and SOL W. GINZBURG, M. D. 66 pages. Cloth. King's Crown Press, Columbia University. New York. 1953. Price $2.00.

This is one of the monographs in the "Human Resources Studies" undertaken by the Graduate School of Business, Columbia University. It is a reappraisal of the military manpower problems and requirements experienced during World War II. It summarizes the opinions expressed by a large group of psychiatrists who were in military service.

It was the opinion of those consulted that the screening process used, that is, a rapid elimination of unstable, neurotic or psychotic individuals, was wrong; that a person's strong points instead of his weak points should be stressed. If a person had made a good adjustment in civilian life, it was held, he should be able to adjust to military life; and screening processes should be explicit and stable, rather than fluctuating in objectives and policies. All those who were in military service know only too well what this latter comment means.

It was the authors' opinion that men "break," not only because of personality defects, but that there are "important factors as the stress and support balance in the environment, leadership, and group morale," and that manpower could have been saved if military tradition, better indoctrination, better personnel assignment and utilization had been practised by the military services.

The Dream Boaters. A Story of Young Dope Addicts. By LARRY FRISCH. 122 pages. Cloth. Exposition. New York. 1953. Price $2.75.

In this book, one sees a 'teen-age girl becoming a narcotic addict, first smoking marijuana and later using heroin. Two young men are also involved. The girl's middle-class parents realize only late in the process the factors which made their girl different in personality and attitudes. The tragic climax involves murder for one of the addicts and hospitalization for the girl. The story is good reading and has its dramatic moments. The book is recommended.

Proceedings of the Fourth International Congress of Mental Health. Alfonso Millan, M. D., editor. XVI and 386 pages. Paper. Columbia University Press. New York. 1953. Price $5.00.

These proceedings form a complete coverage of the international mental health congress and contain all the reports given during the meeting in Mexico City from December 11 to 19, 1951. Workers in the mental health field from 37 countries exchanged information of inestimable value, and the reader will be immensely stimulated by the accomplishments reported.

The Psychology of Personality. By BERNARD NOTCUTT. 235 pages. Cloth. Philosophical Library. New York. 1953. Price $4.75.

Textbooks suitable for introductory courses in the psychology of personality have become numerous in the last decade. Purely as such a text, this addition to the list has little to recommend it over the others. The author's rather nontechnical introductory definition of personality calls it "the pattern of an individual life." He divides personality theories into three groups: trait theories, those based principally on nature's endowments; environmental theories, emphasizing the nurture side of the nature-nurture controversy; and interaction theories, combining the first two. His approach to these is basically historical, and no new material is developed. A section of the book is devoted to methods for analyzing the personality: a listing and brief description of useful techniques, such as psychoanalytic interviews and projective tests.

A chapter entitled "The Logic of Validation," is devoted to the importance of *proving* ideas; it discusses methods, including many statistical ones (from a descriptive basis) that are useful in determining the validity of a thought. This chapter is the outstanding feature which saves this book from being a simple re-hash of old material. The reading is easy, and the treatment is rather broad, though lacking in depth. The book should be interesting reading for non-majors in the field.

Statistical Methods for the Behavioral Sciences. By ALLEN L. EDWARDS. 542 pages including index. Cloth. Rinehart. New York. 1954. Price $6.50.

This is a text and reference volume for the general use of persons who must apply or understand statistics and statistical method. The author explains the purpose by noting that automobile manufacturers publish two different sets of instructions for their cars: one for the driver and another for the mechanic. This text, he says, is more like the automobile book for the driver than like the one for mechanics. It starts very simply with a review of symbols, rules and principles, and proceeds to cover the major subjects required for statistical treatment of any behavioral science. The book should be valuable both for teaching and for reference.

The Islanders. By JOSEPH AUSLANDER and AUBREY WURDEMANN. 305 pages. Cloth. Longmans, Green. New York. 1951. Price $3.00.

A novel about Greek sponge-fishers in a small town on the west coast of Florida is written with friendliness and feeling, but without psychological understanding of the characters described.

Chronos, Eros, Thanatos. By MARIE BONAPARTE. 156 pages. Paper. Imago. London. 1952. Price 12/—.

Three papers published respectively in 1939, 1948 and 1951 in the *Revue Française de Psychanalyse* are grouped in this volume. The publisher invites the reader to consider these papers by Marie Bonaparte as philosophical studies on the relationships between the soul or psyche and the great entities known through the symbols of time, love and death—Chronos, Eros and Thanatos. These papers are thus theoretical essays on the impact of the unconscious on daily life—an interesting and well-written presentation, showing how greatly knowledge gained from psychoanalysis has influenced our attitude toward any manifestation of human endeavor.

Could it be that time, as Kant postulated, is only an exteriorized form of our psyche? In her first paper, the author studies the conscious conceptual element, time, and the disturbances brought about in it from the timeless unconscious. The unconscious motivates our attempts to escape from the impact of time or to counterinfluence its destructive tendencies. A tenuous relationship between ultimate psychoanalytic findings and biological facts leads the author to affirm her belief in the existence of a substratum in reality to the phenomenon which we experience and know as time. This is beyond proof by reason.

In the second paper, Princess Bonaparte studies the ambivalence of Eros in its numerous manifestations, from the attitude of men toward God to an inferred "biological resistance to sexuality." This leads to the recognition of ambivalence toward one's self and an appraisal of the economic problem of sado-masochism, subject of the third, and, in the reviewer's opinion, the most interesting part of the book. These concepts are discussed as presented by Freud and Sade. The author differentiates death from destruction and aggression. She favors the hypothesis of a negative entropy for the phenomenon of death. Destrudo would be opposed to Libido, and aggression would derive exclusively from Libido. But these matters defy human sagacity (p. 141), are beyond proof by reason. However, "the object of our study" is primarily an attempt to define the psychobiological basis of sado-masochism. The author elaborates on ideas previously expressed in her book, *Psychoanalysis and Biology*, where a parallel is drawn between the two disciplines.

The Untidy Pilgrim. By EUGENE WALTER. 253 pages. Cloth. Lippincott. Philadelphia. 1954. Price $3.50.

A young writer with the motto, "I have for some time been bored slapdab to death by the Sad Cypress school of Southern writing," attempts the vivacious approach—to end up with a group of eccentrics in a book which explains nothing and understands even less. Being alive and being glad of this fact are by no means sufficient foundation for a readable book.

Art and Play Therapy. By EMERY I. GONDOR. x and 61 pages. Paper. Doubleday Papers in Psychology. Doubleday. New York. 1954. Price 95 cents.

This fine book is one to set beside that classic *Let The Child Draw*, by van Deering Perrine. Indeed it carries the spirit of that work further, because of the trained psychological insight that Mr. Gondor plainly possesses. Of this simply written, unpretentious book let the reader beware, however, since Gondor's gentle, paternal style misleads one into neglect of the facts that great skill and practice are necessary before such results as he so beguilingly describes can happen. Perhaps of all psychotherapeutic tasks, play therapy is the most herculean.

This is an imaginative book, full of suggestions for the therapist, and in addition, is a supportive tonic as well. As with others of its kind it raises the old question: How did Mr. Gondor become the splendid therapist he so obviously is? Can it be learned?

The Girl with the Scarlet Brand. By CHARLES BOSWELL and LEWIS THOMPSON. 171 pages. Paper. Fawcett Publications. New York. 1954. Price 25 cents.

Here is a record of the proceedings in the once notorious Florence Maybrick murder case. An American-born girl, married to a much older broker in Liverpool, was accused in 1889 of having poisoned her husband with arsenic. Although the evidence was more than slim (the husband used arsenic as an aphrodisiac), the widow was sentenced to hang; later the sentence was commuted to life imprisonment, and the unhappy woman was released after 15 years in prison. The case is interesting because of the details of English court procedures, and because of the Victorian morality transpiring in the trial: The accused woman was proved to have been unfaithful; an unfaithful woman is "capable" of murder, too. The presiding judge said as much.

The Peril of Silence. By OSCAR D. MEYER. 309 pages. Cloth. Vantage. New York. 1953. Price $3.50.

This book is written by an elderly syphilologist in St. Louis, who claims that in the night of October 23, 1925, he heard a voice commanding his exclusive medical concentration on syphilis. He took this as "Spiritual Manifestation," and obeyed. One wonders whether, in St. Louis in 1925, there was such a lack of specialists in this field that God Himself had to intervene. In any case, the author did commendable work afterward in warning of the dangers of the disease; his novel is part of this campaign against ignorance. The whole story is so filled with good will and humanitarianism that it is difficult to be too critical.

Conferences on Drug Addiction Among Adolescents. 320 pages including index. Cloth. Blakiston. New York. 1953. Price $4.00.

This volume covers two conferences held in 1951 and 1952 at the New York Academy of Medicine. The 52 contributors include psychiatrists and other physicians, pharmacologists, sociologists, judges, legislators, district attorneys, teachers, social workers, law enforcement agents, and others.

One definite result of the conferences was to correlate and integrate data on adolescent drug addiction gathered by the magistrates' courts of the City of New York with the assistance of the United States Public Health Service. A project was started at New York University for this purpose.

The book consists of 301 pages with an appended glossary of terms used by the teen-age drug users or addicts. The first conference covered the medical aspects of addiction, psychological and sociological features, and means of prevention of the spread of drug addiction among teen-agers. There was considerable discussion of withdrawal symptoms and of the need for both clinical and experimental research.

At the second conference, there was much emphasis on the view that addiction among teen-agers was primarily a sociological, psychological and economical problem and secondarily a medical one. Besides this controversial subject, however, the questions of predisposition to the use of drugs and somatic factors were discussed. There was agreement that there is no general type of personality who becomes a drug addict. The latter part of this second conference was principally taken up with the problem of New York City in the establishment of Riverside Hospital for the treatment of teen-age narcotic addicts.

This book as a whole is interesting, but actually does little more than put on paper the thoughts of various investigators. It does point out that present-day knowledge of this subject is meager and that there is need of much enlightenment.

The Mouse That Roared. By LEONARD WIBBERLEY. 280 pages. Cloth. Little, Brown. Boston. 1955. Price $3.50.

Mr. Wibberley's mouse roars an astonishing combination of amazingly good-humored satire, science fiction, fantasy and practicality. There is, in addition, a psychologically interesting and altogether too plausible picture of what is likely to result from an atom bomb practice alert under simulation of actual war conditions. There is also a practical suggestion for dealing with the problem of atomic war which is certainly no sillier than many which have been advanced in official quarters.

People interested in the psychology of civil defense should enjoy this book and might find it profitable. For psychiatric readers and readers in general, it is more good fun than has come off anybody's press in many a month.

Frontal Lobes and Schizophrenia. Milton Greenblatt, M. D., and Harry C. Solomon, M. D., editors. 425 pages. Cloth. Springer Publishing Co. New York. 1953. Price $12.50.

This comprehensive study of methods and results of lobotomy is the second lobotomy project of the Boston Psychopathic Hospital. One hundred sixteen patients, mostly chronic schizophrenics, were investigated in an exhaustive fashion. Patients for controls were matched in regard to age, sex, diagnosis, IQ level and length of hospitalization.

The comparative anatomy and physiology of the frontal lobes is discussed. Each patient was considered from the viewpoint of psychology, sociology, physiology and pathology. A careful definition of psychiatric terms was felt necessary.

Elaborate psychologic studies involving many specific tests, a battery of tests to evaluate sociability and several physiologic approaches are considered. The polygraph, with its simultaneous measurements of many body processes, is used as a measure of autonomic nervous system tonus and responsiveness. The use of epinephrine and mecholyl as a measure of prognosis is presented by Funkenstein.

With these and other tools the effects of three operative procedures, unilateral, bilateral and bimedial lobotomy, are considered. The bimedial lobotomy "appears to give the best overall clinical results." Lobotomy is valuable because of "the loss of tension. . . . They [lobotomized patients] are better organized, more capable of abstract thinking, more friendly, more social and more productive."

The Gifted. By Roswell G. Ham, Jr. 215 pages. Cloth. Crown. New York. 1952. Price $3.00.

A group of moneyed neurotics in Chicago is described here with some wit and a total lack of understanding of unconscious motivations. A homosexual transvestite is created by his mother's wish that he were a girl; a masculine woman by her father's wish for a boy; frigidity is the result of domestic factors; and there are other similar absurdities. This sordid account of neurotic "love" is entirely without psychological validity.

The Art of Relaxation. By Herman S. Schwartz. 212 pages. Cloth. Crowell. New York. 1954. Price $3.00.

It is Schwartz' contention that when the body is physically relaxed it can thus mentally relax. The author believes that everyone should at all times, either consciously or at a semi-conscious level, have the thought of physical relaxation on his mind. The book contains some very good exercises, which, of course, will not solve emotional problems as the author seems to believe.

Inside. By HELEN BRYAN. 305 pages. Cloth. Houghton-Mifflin. Boston. 1953. Price $3.00.

For three months, Helen Bryan was a prisoner in the Federal Penitentiary for Women at Alderson, W. Va. *Inside* is her story of those three months. She had been sentenced to Alderson on a contempt of Congress charge for failing to submit names on the rolls of the Spanish Aid Committee of which she was secretary. She describes vividly her experiences during her first two weeks in quarantine, after which she lived in a cottage with about 20 other girls for the duration of her sentence. Most of the remainder of the book is spent in telling of these girls, who were sentenced to Alderson for such things as prostitution, drug addiction, robbery, kidnaping and murder. She paints them in the most tender light and at the time of reading, it is hard not to empathize with most of them. Upon reflection, one wonders if they were as bright as painted.

On the more positive side, Miss Bryan feels that both religion and psychology are very neglectful in not fully utilizing the ripe field of rehabilitation work they could find in prisons. Some is being done but not nearly enough.

One aspect of this book which is hard to credit is Miss Bryan's description of her personal feelings of despair and her feeling that the time would never pass when she would be out of prison. Considering the shortness of her sentence, this seems overdone and gives the unfortunate impression of being consciously done for the sake of the effect.

The Diminished Mind. By MORTIMER SMITH. 150 pages including index. Cloth. Regnery. Chicago. 1954. Price $2.75.

In *The Diminished Mind* Mortimer Smith makes a brilliant and documented attack on current educational practices and "the educationists." The matter of general education is at present of very great concern to the scientist who recognizes that scientific education must be built upon a sound base. Smith contends that such a sound base is not being provided and that the present trend in education is toward the lowering of general mental performance and capacity in our population as compared with times past. He presents an impressive and persuasive argument, the more so for its compression into such small space.

Germany's New Nazis. Prepared by The Anglo-Jewish Association. 76 pages. Cloth. Philosophical Library. New York. 1952. Price $2.75.

This is a factual review of neo-nazism of different shades in present-day Germany, confirming what is generally known: Hitler's psychosis still finds customers.

Portrait of Andre Gide. By JUSTIN O'BRIEN. 390 pages, illustrated. Cloth. Knopf. New York. 1953. Price $6.00.

Though primarily oriented toward literary criticism, this book presents a rich and insightful picture of one of the more complex and fascinating men of French letters, André Gide, and should prove of no little value in the understanding of Gide as a man as well as a writer. Always deeply absorbed in his own desires and frustrations, experiences and reflections, Gide found in his writing abundant cathartic release cast in artistic form. Thus his writings are but so many different faucets from which flow the diverse, conflicting, yet great turbulations of his psychic evolution. Concerning the relationship of his life to his writings, the author dwells intelligently upon Gide's prolonged adolescence, his extreme narcissism and insatiable thirst for self-analysis, his much-publicized homosexuality, his preoccupation with, and analysis of, the unusual and curious (which frequently ran into the bizarre), his passion for, and indulgence in, experience of the broadest and most diversified form, and his subsequent and frequent torturing remorse.

This book is a penetrating and comprehensive study of the life-time work of Gide and of the interrelationships of his life, writings, and ideas by the man who translated the *Journals* into English and who knew Gide well.

Emotional Factors in Skin Disease. By ERIC WITTKOWER, M. D., and BRIAN RUSSELL, M. D. 203 pages. Cloth. Hoeber. New York. 1953. Price $4.00.

The preface of the book states, "The writers of this book are a dermatologist and a psychiatrist. There are some who regard these specialties as poles apart and consider (to change the plane of the metaphor!) that East is East, medically speaking, and West is West, and that never the twain shall meet, the dermatologist being a person who looks at the skin and a psychiatrist, a person who looks after mad people. To these we should reply that the dermatologist should learn to look beneath the skin, well beneath, in order to assess the feelings and unconscious motives of his patient which may be expressed, however inadequately, in the skin. . . ."

After presenting a general discussion of the anatomy and physiology of the skin, the authors describe specific skin disorders in which psychosomatic factors are particularly important. In the study of each specific skin disease the authors have briefly reviewed the literature, studied each case from a psychiatric viewpoint, recorded the findings and the results of treatment.

This book, therefore, is unusual in that it represents the joint endeavors of men trained in two different disciplines. Also, it is a book which every doctor should read.

Films in Psychiatry, Psychology and Mental Health. By ADOLPH NICHTENHAUSER, M. D., MARIE L. COLEMAN and DAVID S. RUHR, M. D. 269 pages. Cloth. Health Education Council. New York. 1953. Price $6.00.

The authors of this book attempt, first, to increase the usefulness of films in psychiatry, psychology and mental health education—make them more useful to more people—and, second, to begin the setting up of high standards for making better new films in this important area of medical science. To accomplish this, the book is divided in four separate sections, the first of which, eight pages long, comprises a gallery of scenes from films in this field. The second section describes in detail the methodology used for the reviews included in Part III. This is followed by a discussion of the interaction of content and presentation, and of the use of motion pictures in teaching psychiatry.

Part III, the main body of the book, contains critical reviews of 101 films, 51 of the reviews comprehensive and covering type of audience; data of film size, color, running time, etc.; where obtainable and price; content of film story; appraisal of contents, presentation and general effectiveness; and discussion of the film's utilization. Section IV of the volume consists of two indices, one a suggested audience guide for 18 groups, such as medical students, psychologists, and nurses. The second index is for subject matter and covers not only the main subjects, but breaks them down into smaller headings.

This book is a lofty undertaking and one that could be most useful. More and more use is now being made of audio-visual aids and the standardization of mental health films would be a great boon. This book sets high standards, and films made to meet them would be of great help in teaching. The reviewer hopes that this book will have annual supplements to keep its film reviews up to date.

The Will to Kill. By ROBERT BLOCH. 155 pages. Paper. Ace Books. New York. 1954. Price 25 cents.

It is a pity when a gifted writer, which Bloch certainly is, specializes on a topic for which he is not psychologically competent: murder. The result is a continuous flow of thrillers with the wrong psychological slant. Nothing but the most primitive revenge is adduced as motivation; the author is unfamiliar with the masochistic and passive-infantile trends in murder. In Bloch's case, a regrettable retrogressive trend is observable: In his first novel, *The Scarf*, published some years ago, the motivation of infantile repetition was stressed, though aggression was taken at face value. This time, even this tangential approach is missing.

Female Homosexuality. By FRANK S. CAPRIO, M. D. 334 pages. Cloth. Citadel Press. New York. 1954. Price $5.00.

Caprio has "covered the history, contemporary prevalence, causes, types and many other aspects of female homosexuality." He shows how Lesbianism is *environmentally* determined rather than due to hereditary or hormonal factors, and from studies and research here and abroad, writes an enlightening book on the sociological problems associated with this aberration. He concludes that psychoanalysis—psychotherapy and the drive of the patient to be well—constitutes the only effective treatment.

This is a book which has required extensive research and clinical study, and should be referred to by any professional individuals dealing with the emotional problems of women. It would also do much to stimulate a preventive program for the public. It is hoped that there will be more such works forthcoming, since they constitute a more constructive force than the publication of mere sociological data.

European Seminar and Lecture Course on Alcoholism. Proceedings Compiled by E. M. Jellinek. 121 pages. Paper. World Health Organization. Geneva, Switzerland. 1953. Free.

Sponsored by the Royal Danish Government in co-operation with the World Health Organization and the United Nations in Copenhagen in 1951, this compilation on *Alcoholism* is a highly scientific and factual review of the proceedings, dealing with the etiology of alcoholism, the clinical picture, the psychodiagnostics, public care, and control measures. There are informative tables, figures, and appendices. The seminar included many psychiatrists and other physicians from Austria, Denmark, France, Germany, Sweden, and other countries. Their views, based on experimental and experiential investigation, are basic and, in composite, serve as a functional reference for anyone concerned with the disease of alcoholism.

Group Work with the Aged. By SUSAN H. KUBIE and GERTRUDE LANDAU. 214 pages. Cloth. International Universities Press. New York. 1953. Price $3.50.

This book is a description of the setting up of a recreation center for the aged. Clubs for older people are not new, the new factor here being that the Hodson Center was initiated by a department of welfare. By providing a means to utilize the leisure of the aged, there was a lessening of the "feeling of uselessness" so common among people no longer able to work. Follow-up studies were not made, so that this book cannot be used as a scientific evaluation of the effects of the project—though the authors did remark on the rarity of mental symptoms among those attending. Both successes and failures are recorded here, and one gets the impression that on the whole the project has been of great value.

The Roots of Psychotherapy. By C. A. Whitaker and T. P. Malone. 230 pages. Cloth. Blakiston. New York. 1953. Price $4.50.

A collaborative, interesting and thoughtful book is written by the chairman and the research director of the department of psychiatry of Emory University School of Medicine. The authors review different types of psychotherapy, placing the greatest emphasis on the patient's growth capacity. According to its readers' orientations, adherents of different schools will find various deductions questionable; many omissions are conspicuous. This book's main value is clarification of controversial concepts in the reader's mind by way of question marks. It acts as a catalyst, which is more than can be said of many books of this type.

Educational Wastelands. By Arthur E. Bestor. 226 pages. Cloth. University of Illinois Press. Urbana. 1953. Price $3.50.

This is a brilliant educator's sour review of the subject of present-day education, which he believes in need of reform, reorganization of teacher-training, and the re-establishment of standards through examination. This is a scholarly, informed and, in the old sense of the word, "liberal" presentation. This discussion is worth the attention of any reader interested in the future of education, of science, and so of society in general.

Headland. By George Troy. 268 pages. Cloth. Bobbs-Merrill. Indianapolis. 1952. Price $3.00.

This is a well-meaning but miscarried attempt at describing in the framework of a novel the neurotic breakdown of a journalist, just back from the war. The only reasonable statement in the book is made by his wife who doubts whether her husband's troubles are directly connected with his war experiences. Otherwise, everything is unclear from motivation to symptom.

Fundamentals of Psychoanalytic Technique. By Trygve Braatoey. 377 pages. Cloth. Wiley. New York. 1954. Price $6.00.

This is a well-meaning, though miscarried, attempt to "relieve tensions in the student" (p. 68) of psychoanalysis, by anticipating his objections, and explaining basic principles. Some explanations are gross simplifications (e. g., the differences between Freudian analysis and Horney's). Many other statements are controversial.

The Deadweight. By Wayland Hilton-Young. 291 pages. Cloth. Scribners. New York. 1952. Price $2.50.

This is a British first novel, written without psychological insight and flirting with problems of guilt. Inept is a kindly description. Why such books are imported by good publishers, is difficult to understand.

Poems from Desolation. By HARRY W. JOHNSON. 48 pages. Cloth. Exposition Press. New York. 1953. Price $1.50.

The author of these verses is a prisoner serving a life sentence for murder in the Eastern State Penitentiary in Philadelphia. His poems are pathetic attemps at uplift; a true note is discernible in his masochistic complaints ". . . and she, a fiery goddess—wielding the sword of jealousy—bent on splitting my heart—with one cruel stroke—of the blade."

Explorations in Psychoanalysis. Robert Lindner, editor. 287 pages. Cloth. Julian Press. New York. 1953. Price $7.50.

Twenty-one essays written in honor of Theodor Reik's sixty-fifth birthday are presented here. With few exceptions (Lindner's study on gambling, Grotjahn's attempt at demonstrating intuition in the analytic classroom), the level is substandard. This is especially marked in the section on literature.

Alfred North Whitehead. An Anthology. Selected by F. S. C. Northrop and Mason Gross. 928 pages. Cloth. Macmillan. New York. 1953. Price $12.50.

Philosophy and mathematics are integrated by Alfred North Whitehead in the endeavor to provide a concrete foundation for philosophy. The papers collected here, with one exception, deal with Whitehead's philosophical writings, but even so they delve too far into mathematical concepts to be understood by the reader without a specialized mathematical background.

Devil's Bridge. By MARY DEASY. 365 pages. Cloth. Little, Brown. Boston. 1952. Price $3.00.

A man is obsessed with the idea of building a suspension bridge; but this attempt at sublimation is not explained; psychological problems are not in the sphere of interest of the author. Everything else in the novel is the usual trimming.

The Joyful Condemned. By KYLIE TENNANT. 395 pages. Cloth. St. Martin's Press. New York. 1953. Price $2.75.

This is a vivid description of criminotics and delinquents in an Australian town. It is written with sympathy, but lack of any deeper psychological understanding of criminal activities.

Wait, Son, October Is Near. By JOHN BELL CLAYTON. 255 pages. Cloth. Macmillan. New York. 1953. Price $3.50.

This novel purports to describe the conflict of a boy of 10, when confronted with a marital conflict of his parents. It is poorly written, and shows an amazing lack of psychological insight.

The Man Without Qualities. Vol. II. By ROBERT MUSIL. 454 pages. Cloth. Coward-McCann. New York. 1954. Price $5.00.

Volume II of Musil's fictional life-work (Vol. I was reviewed in this QUARTERLY, 28:1, 157, January 1954) adds nothing to change or modify the previous impression: highbrow irony plus half-mystical allusions, all pertaining to the world of the Hapsburgs which collapsed in 1918. Some parts are readable because of the author's eccentricity; others are intolerably boring. In his notebooks, the author confessed: "What the story that makes up this novel amounts to is that the story that was supposed to be told is not told." Hence the circumlocution and evasion, leaving the reader with the unanswered question, "What does the author really intend?"

The Caroline Affair. By C. H. GIBBS-SMITH. 218 pages. Cloth. Viking. New York. 1954. Price $2.75.

A British reviewer quoted on the dust cover recalls the pleasure and excitement he first felt on reading John Buchan's *Greenmantle*. The present reviewer disagrees. This is a harmless, psychiatric suspense story with psychiatry flavored by Jung and not too much suspense. The follower of such fiction may enjoy it although the psychiatrist will find parts of it hard to swallow. And it is no *Greenmantle*.

Between Two Worlds. By B. L. GORDON. 345 pages. Cloth. Bookman Associates. New York. 1952. Price $4.00.

The story of the poor immigrant boy who made good, has been told time and again. It is told in this book by an aged physician who discharges his task with tact and intelligence. Interesting also, are his early Zionist associations, and his philosophical dissertation as to why the author, as an old man, is not afraid of dying.

Emotional Difficulties in Reading. By BEULAH KANTER EPHRON. 283 pages. Cloth. Julian Press. New York. 1953. Price $5.00.

A well-meaning description of techniques employed in a "Reading Center" is presented here. The technique is eclectic ("deriving from Freud, Reik, Horney, Rogers and others," p. 268); the explanations used are rather superficial. The psychological substructure is not fully worked out.

The Dead Seagull. By GEORGE BARKER. 142 pages. Cloth. Farrar, Straus and Young. New York. 1951. Price $2.50.

The Dead Seagull is a tragedy in poetic language, based on the theme: "Upon those who sacrifice the future to the present, the future will, in time, exact a terrible revenge." It may or may not have psychological insight, but it does have considerable poetic beauty.

Personality Tests and Assessments. By PHILIP E. VERNON. 220 pages. Cloth. Methuen. London. 1953. Price $4.00.

On the cover of this book is the statement that this work "provides the first comprehensive account of methods of personality assessment by a British author." As such it provides an interesting contrast to the already large number of similar publications by American psychologists. For, more and more each year, the American psychologist has centered his conception of personality measurement around the "projective techniques." The basic American hypothesis is that personality is a "dynamic" affair, an understanding of which necessitates the application of tests which are designed to tap the deeper, underlying "goings-on" of psychological forces. This, he holds, can best be done through "projective techniques."

However, the English psychologist, in a "hard-headed" empirical approach, is concerned with the externalities of personality, the habitual modes of responding, and the intercorrelations of these modes, with little concern for the inherent subjectivity of "dynamic" interpretations. Thus, it is with these modes of responding, or "traits," and their combinations, or "trait-composites" that the author is concerned. And the way in which they may best be studied is through obtaining "objective" ratings, test scores on questionnaires, or through interview judgments of behavior, and evaluations of expressive movements, that is, handwriting, patterns of speech, and the like. The author himself is well known as one of the constructors of the Allport-Vernon "Studies of Values" test, which has been rather popular in this country. In this book, he offers a very careful and competent summary and evaluation of the validity, reliability, and intercorrelations of a wide number of such tests. For the "projective techniques" he has but a few comments to make in a concluding chapter.

In spirit, and in content, this is a companion volume to the newly published *Structure of Human Personality*, by H. J. Eysenck, and should prove of value as a text or reference book for undergraduate courses in psychological testing and clinical procedures. It may prove too narrowly specialized treatment for either the medical or the lay reader.

The Women of Magliano. By MARIO TOBINO. 183 pages. Cloth. Putnam. New York. 1954. Price $3.00.

A description of an Italian state hospital for psychotics is written by a psychiatrist. It is difficult to imagine the purpose of this book; the psychiatrist can learn nothing from the sketchy descriptions; the layman can understand little from the enumeration of cases. Feelings of compassion for the sick are discernible, but no attempt at therapy is mentioned. It is possible that the author wanted to express the feeling, stated on p. 43: "In Italy anyone who gets ill is treated like a jailbird."

CONTRIBUTORS TO THIS ISSUE

JOSEPH WEISS, M. D. Dr. Weiss is in the private practice of psychiatry in San Francisco. He is a staff member of the Mount Zion Psychiatric Clinic, and a candidate at the San Francisco Psychoanalytic Institute. He was graduated from Harvard University in 1945 and the University of Cincinnati Medical School, 1949. He received intern training at Cincinnati General Hospital; he also had residency training there and at Mount Zion Psychiatric Clinic. Dr. Weiss and Dr. Estelle Rogers were the psychiatrists in the special project of the California Sexual Deviation Research that is the basis for the study of girl sex victims in this issue of THE QUARTERLY.

ESTELLE ROGERS, M. D. Dr. Rogers, a graduate of the University of Texas and of the University of Texas Medical School, interned at St. Louis City Hospital, and had residency training at the Veterans Administration Hospital, Palo Alto, Calif. She is now practising psychiatry in San Francisco, where she is on the staff of the Adult Guidance Center. She is a candidate in the San Francisco Psychoanalytic Institute. Dr. Rogers and Dr. Joseph Weiss were the psychiatrists in a special project of the California Sexual Deviation Research, discussed in a paper in this issue of THE QUARTERLY.

MIRIAM R. DARWIN, A. B. Mrs. Darwin is a supervising psychiatric social worker of the adult inpatient service at The Langley Porter Clinic, San Francisco. She was the staff psychiatric social worker for the research project in sexual deviation described in a paper in this issue of THE QUARTERLY. A graduate of Western Reserve University, she received her training in psychiatric social work at the University of Chicago. After work at the New York City Jewish Board of Guardians and in Red Cross Hospital Service, Pacific Area, she served six years as executive director of the Florence Crittenton Home, San Francisco.

CHARLES E. DUTTON, Ph.D. Dr. Dutton is now on the staff of clinical psychology, Stockton State Hospital, Stockton, Calif. He served as clinical psychologist on the project of the California Sexual Deviation Research that is described in this issue of THE QUARTERLY. He received his Ph.D. in the department of education, Stanford University, in 1953.

C. W. BUCK, M. D., Ph.D. Dr. Buck is a member of the faculty of medicine of the University of Western Ontario, London, Ontario. She is assistant professor in the department of psychiatry and preventive medicine.

H. B. CARSCALLEN, M. D. Dr. Carscallen is with the Westminster Hospital for Veterans, London, Ontario. He is assistant director of the Psychiatric Institute of that hospital.

G. E. HOBBS, M. D., M. P. H. Dr. Hobbs is a psychiatrist and specialist in preventive medicine in London, Ontario. He is professor and head of the department of psychiatry and preventive medicine of the faculty of medicine, the University of Western Ontario, in that city.

A. HARRIS, M. A., M. D., D. P. M. Dr. Harris qualified for medical practice in Manchester, England, with the degree of M.B.Ch.B., in 1934, began psychiatric training in 1936, and worked in various junior posts in Maudsley Hospital and London County Council Mental Hospitals until 1941. Dr. Harris served in the Royal Air Force medical branch as a neuropsychiatric specialist from 1941 to 1946, then joined the senior staff of Maudsley Hospital. Bethlem Royal Hospital and Maudsley Hospital were amalgamated in 1948 to form a single postgraduate teaching center for psychiatry, and Dr. Norris teaches in the University of London also. Previous publications have been eight scientific articles in the *Journal of Mental Science*, the *British Medical Journal* and *Lancet*.

VERA NORRIS, M. B., Ch.B., Ph.D. Dr. Norris is medical statistician of the Institute of Psychiatry, the University of London. She is the author of a number of previous scientific publications; and she worked previously with Professor Hogben of Birmingham.

PAUL W. DALE, M. D. Dr. Dale trained at Harvard College, Harvard Medical School, Colorado Psychopathic Hospital, and Walter Reed Army Hospital. He served in the army medical corps from 1949 to 1954. Mathematics is a hobby; and he writes that his article in the present issue of THE QUARTERLY is a product of recreation rather than of labor. He is at present associated with Stamford Hall, Stamford, Conn.

JOOST A. M. MEERLOO, M. D. Dr. Meerloo, born in The Hague, the Netherlands, received his medical, psychiatric and psychoanalytic training in Leiden. He was chief of the psychological department of the Nether-

lands army during World War II and, later, high commissioner for welfare. He has been in practice as a psychotherapist in New York City since the war. Dr. Meerloo is the author of a number of scientific books and of numerous scientific articles, including previous publications in this QUARTERLY, all in the fields of psychoanalysis and social psychology.

SIDNEY MERLIS, M. D. Dr. Merlis received his medical degree from the Creighton University School of Medicine in 1948, served as a research and teaching fellow in the anatomical and biochemical sciences at Creighton for two years, and after a rotating internship at St. Joseph's Hospital, Omaha, Neb., entered the navy. He was medical officer at the Mare Island Naval Hospital and later served in the Pacific as medical officer on a naval transport. He received psychiatric training in the navy, at Central Islip (N. Y.) State Hospital and at the New York State Psychiatric Institute.

At present Dr. Merlis is a senior and research psychiatrist and is in charge of the electro-encephalographic laboratories at Central Islip State Hospital. He is on the research staff of the New York University-Bellevue Post-Graduate Medical School, in the department of neurosurgery. He is author or co-author of a number of scientific articles.

FRANCIS J. O'NEILL, M. D. Dr. O'Neill has been senior director of Central Islip (N. Y.) State Hospital since August 1951. Born in Vermont, he is a graduate in medicine of the University of Vermont College of Medicine in 1932. After internship and a short period in private practice, he joined the New York State hospital service in 1933 at Central Islip and has remained with the state hospital system ever since, except for naval service during World War II. Dr. O'Neill's active interests have included pathology and administration; he was pathologist at Binghamton State Hospital when he entered naval service in 1941; was pathologist and chief of laboratory service, as well as chief of psychiatric service, in the navy; and returned to Binghamton as director of clinical laboratories in 1946. Since that year, his work has been administrative, as assistant director (administrative) of Central Islip State Hospital from 1946 to 1949; as director of Utica State Hospital from 1949 to 1951; and as senior director of Central Islip since 1951.

FREDERICK WEINBERG, M.D. Dr. Weinberg, director of laboratories and co-ordinator of research at Central Islip (N. Y.) State Hospital, is a graduate of New York Medical College, in 1930. He interned at Metropolitan Hospital, New York City and took his residency training in pathol-

ogy and clinical pathology at Queens General Hospital. He served with the army medical department from 1942 to 1946 and joined the New York State service in 1949. He is a diplomate of the American Board of Pathologic Anatomy and Clinical Pathology.

E. JAMES McCRANIE, M. D. Dr. McCranie was graduated from the Medical College of Georgia in 1945. He served a rotating internship at the University Hospital, Augusta, Ga., and a psychiatric residency in the Boston Veterans Administration Residency Program. He is assistant professor of psychiatry at the University of Texas-Southwestern Medical School. He is on the staff of Parkland Memorial Hospital, Dallas, Texas, and is consultant at the McKinney Veterans Administration Hospital.

HAROLD B. CRASILNECK, Ph.D. Dr. Crasilneck received his Ph.D. in clinical psychology at the University of Houston in 1954. He served for several years on the faculty of Trinity University, San Antonio. At present he is an instructor in the department of psychiatry of the University of Texas-Southwestern Medical School. He is an associate staff member at Parkland Memorial Hospital, Dallas, Texas, and consultant at McKinney Veterans Administration Hospital. He is engaged in extensive research on the medical application of hypnosis.

HENRY R. TETER, Jr. Mr. Teter is director of the electro-encephalograph laboratory at Parkland Memorial Hospital, Dallas, Texas. He is also in the private practice of electro-encephalography and is associated with several other hospitals in Dallas. He had extensive training and experience in electro-encephalography in the navy.

FRED A. METTLER, M. D. Dr. Mettler is professor of anatomy at the College of Physicians and Surgeons, Columbia University, New York City, and is widely known as a research worker, research director, teacher, writer and editor in the fields of anatomy, psychiatry and neurology. He has been director of research for the New York State Department of Mental Hygiene since 1949. He has been chairman since that year of the committee on psychosurgery of the Division of Mental Hygiene of the National Advisory Mental Health Council, United States Public Health Service. He has been active in research in topectomy and other psychosurgical procedures and has been author, co-author or editor of a number of books and shorter studies in this field. Dr. Mettler is a graduate of Clark University; he received his Ph.D. in anatomy from Cornell and his medical degree from the University of Georgia. He has held a number of teaching positions. Dr. Mettler is a frequent contributor of scientific articles to this QUARTERLY.

SHIRLEY M. FERGUSON-RAYPORT, M. D. Dr. Ferguson-Rayport is a graduate of Syracuse University, from which she received her medical degree in 1947. She interned at Jewish Hospital, Brooklyn, trained for two years in obstetrics and gynecology at New York Infirmary, New York City, and for a year in internal medicine at Goldwater Memorial Hospital, New York City, before taking up a two-year psychiatric residency at the Veterans Administration Hospital, Lexington, Ky. She has been at Allan Memorial Institute, Montreal, for two years—a final year of psychiatric residency and the present year as a clinical fellow in psychosomatic research, leading toward a diploma in psychiatry from McGill University.

RICHARD M. GRIFFITH, Ph.D. Dr. Griffith is clinical psychologist, assigned to research on expressive movements, in the medical research laboratory, at the Veterans Administration Hospital, Lexington, Ky. He received his B. S. in mathematics in 1943, and after spending the next four years as an officer in the air force, returned to the University of Kentucky to major in psychology. He received his M. S. and, in 1950, received his Ph.D. there. While in his present position, he has lectured, part time, in the psychology department of the University of Kentucky.

ERWIN W. STRAUS, M. D. Dr. Straus is director of professional education and research at the Veterans Administration Hospital, Lexington, Ky., where he is in charge of a laboratory for the study of expressive behavior. He is connected with the University of Louisville Medical School, Louisville, Ky., as assistant professor in psychiatry, and is a lecturerer in the psychology department of the University of Kentucky, Lexington. Dr. Straus received his M. D. at Berlin University in 1919. In 1931, he was appointed associate professor of psychiatry at the University of Berlin. He was co-editor of *Der Nervenarzt*. After immigration into this country in 1938, he was, until 1944, professor of psychology, Black Mountain College, N. C. Following a fellowship in psychiatry at the Henry Phipps Psychiatric Clinic, Baltimore, 1944 to 1946, he received his medical license in Maryland in 1946 and was certified in 1947 by the Board of Psychiatry and Neurology. Dr. Straus joined the Veterans Administration in 1946. Publications include: *"Geschehnis und Erlebnis," "Vom Sinn der Sinne,"* and *"On Obsessions."*

NEWS AND COMMENT

DR. BIGELOW RESIGNS—RETURNS TO MARCY

Newton Bigelow, M. D., director of Marcy State Hospital, and New York State commissioner of mental hygiene since 1950, gave his resignation from the latter post to Governor Thomas E. Dewey on December 30, 1954 and returned to active duty as head of Marcy. Deputy Commissioner Arthur W. Pense, M. D., became acting commissioner to succeed Dr. Bigelow in the direction of the department.

Dr. Bigelow had held deputy commissioner and assistant commissioner rank at various times since 1943. He was named acting commissioner of the department to succeed Commissioner Frederick MacCurdy, M. D., on April 3, 1950, and he accepted regular appointment on June 29 of that year. Dr. Bigelow had reached the rank of director when he was first assigned to departmental duties as assistant commissioner in 1943, and, in 1945, he became senior director of Marcy, the position to which he has now returned. He was directing Marcy and acting as part-time assistant commissioner when he was called on to succeed Dr. MacCurdy.

A graduate of the University of Western Ontario Medical School, Dr. Bigelow served an internship at Victoria Hospital, London, Ontario, before joining the New York State Department of Mental Hygiene at Utica State Hospital in 1929. He has been with the department ever since. Dr. Bigelow is editor of THE PSYCHIATRIC QUARTERLY, but he has not been active in directing this publication since he assumed responsibility for the department in 1950. Duncan Whitehead, M. D., at present director of Buffalo State Hospital and senior associate editor of THE QUARTERLY, is acting editor.

ASSOCIATION MEETINGS SCHEDULED FOR 1955

The 111th annual meeting of the American Psychiatric Association at Atlantic City the week of May 9 is the fifth medical convention of interest to psychiatry scheduled for that city in May 1955. It is preceded by annual meetings of the American Society for Clinical Investigation, the Association of American Physicians, the American Psychosomatic Society and the American Psychoanalytic Association.

The first important national convention of the year is the thirty-second annual meeting of the American Orthopsychiatric Association in Chicago on February 28, March 1 and 2. The Eastern Group Psychotherapy Association meets at the New York Academy of Science on February 25. The

American Electroencephalographic Society has its ninth annual meeting in Chicago on June 10, 11 and 12, with two symposia—one on micro-electrodes and one on clinical EEG interpretation (head injuries)—in addition to the regular scientific sessions. The American Association for Cleft Palate Rehabilitation schedules its thirteenth annual session in Boston on May 13 and 14. The American Medical Writers' Association conducts its twelfth annual meeting in St. Louis September 30 and October 1, with a program including a workshop on medical writing.

NATIONAL BODY OF STATE HOSPITAL PHYSICIANS PLANNED

A national association of state hospital physicians is projected by the Physicians' Association of the State of Illinois, which has requested THE QUARTERLY to call its readers' attention to the new organization. The society is intended to extend nationally the activities of the Physicians' Association in Illinois which is now 20 years old. That association, made up of doctors of the Illinois State Hospitals, has worked for two decades to improve professional standards, increase morale, better the economic situation of its membership, improve promotional standards, and stimulate scientific activity generally.

The association, THE QUARTERLY is informed, has generally followed these objectives and has aided improvement in state hospital practice in Illinois, but has come to feel that its efforts cannot remain parochial if they are to have the best effect. "We know," says President J. W. Klapman, M. D., "that we need the added strength of all doctors in state hospitals. We need their dynamic, creative efforts in the larger, national purview to bring about optimal results. Far-reaching results in psychiatry and state hospitals cannot be achieved without the man in the field. . . . We are urgently calling on all state hospital physicians all over the country to join with us in a national organization." Interested physicians are invited to communicate with Dr. Klapman at 6500 Irving Park Road, Chicago 34, Ill.

ST. ELIZABETHS OBSERVES 100TH ANNIVERSARY

St. Elizabeths Hospital, Washington, D. C., is observing its 100th anniversary this year. Established through the efforts of Dorothea Lynde Dix, it was set up as the Government Hospital for the Insane by an act of Congress signed by President Franklin Pierce on March 3, 1855; it already had admitted its first patients. Known informally from the beginning as "St. Elizabeths" from the section of the District of Columbia where it was located, the hospital's name was changed officially in 1916. A new 420-bed admission and treatment building is being dedicated this year as the Dorothea Lynde Dix Memorial Pavilion.

In a century, the hospital has had only five superintendents, all presidents of the American Psychiatric Association. Dr. William Alanson White, superintendent of St. Elizabeths, was one of the first American psychiatrists to support the theories and methods of Freud. Dr. Edward J. Kempf of the hospital staff was one of the first to apply psychoanalytic techniques to treatment of hospitalized schizophrenics. Dr. Harry Stack Sullivan did his earliest work in psychiatry at St. Elizabeths; and some of Alfred Korzybski's early work in general semantics was done there. Dr. Winfred Overholser, present superintendent, Dr. Ben Karpman of the present staff, Dr. William Alanson White, and Drs. Bernard Glueck and John Lind, of recent staff membership, are some of the notable figures of St. Elizabeths in the field of forensic psychiatry. Until 1946, St. Elizabeths was closely connected with psychiatric admissions from the armed services. St. Elizabeths pioneered in military psychiatry, in psychodrama and in music and dance therapy for mental cases.

—o—

COURSES AND TRAINING OPPORTUNITIES FOR 1955

The annual workshop in projective drawings, to be conducted at the New York State Psychiatric Institute July 18 to 21, is among the special study courses and training opportunities offered in the psychiatric field during 1955. The workshop, conducted by Emanuel F. Hammer, Ph.D., and Selma Landisberg, M. A., will cover eight different types of projective drawing tests.

Workshops in the Rorschach examination are announced for July 11 to 16 at Children's Hospital, Los Angeles, and for August 15 to 27 at Asilomar Conference Grounds, Pacific Grove, Calif., both to be directed by Bruno Klopfer, Ph.D. Courses in introductory and advanced Rorschach work are announced for June 27 to July 15 at the New School for Social Research, New York City, under the direction of Florence R. Miale and Camilla Kemple; these are evening courses, with graduate credit granted through the graduate faculty of the New School.

The 1955 Spring Conference of the Child Research Clinic of the Woods Schools is scheduled for New York City on May 6 and 7, as a public service by the Woods Schools in collaboration with the department of special education, Teachers College, Columbia University, and the School of Education of the College of the City of New York.

The 1955 summer sessions of the National Training Laboratory in Group Development will cover two three-week periods—from June 19 through July 8 and from July 17 through August 5—at Bethel, Me. The thirteenth annual session of the Summer School of Alcohol Studies of Yale University is scheduled from June 27 to July 22. The third annual Springfield lec-

ture of Springfield State Hospital, Sykesville, Md., has been re-named the Virginia Beyer Lecture as a memorial to the late Dr. Beyer and is scheduled for June 24 and June 25. Stuart C. Miller, M. D., of the Austen Riggs Center is lecturer, with the topic "Contemporary Psychoanalytic Ego Psychology."

A new psychoanalytic training institution is announced by the department of psychiatry, McGill University, Montreal. The announcement, by D. Ewen Cameron, M. D., chairman of the department, names W. Clifford M. Scott, M. D., to organize the new facilities. Dr. Scott has been director of the London Clinic of Psychoanalysis and chairman of the board of directors of the Institute of Psychoanalysis. Associated with Dr. Scott, are Drs. Johann and Gottfriede Aufreiter, both trained in Vienna.

A three-year pioneer program for teaching law students the relationship of psychiatry to modern legal problems is announced by the University of Pennsylvania Law School, under an $89,640 federal grant, effective July 1. A law professor will devote his full time to the work, while a psychiatrist will devote half time. One of the objectives is announced as the acceleration into law of advances in psychiatry as they occur in the future.

A number of research fellowships in multiple sclerosis and allied diseases have been announced by the National Multiple Sclerosis Society. Postdoctoral fellowships will offer a basic stipend of $4,000 to $5,000 a year and an appointment as a scholar of the society will carry a stipend of $6,000 to $8,000.

The American Association of Psychiatric Clinics for Children has announced a number of fellowships for specialized training in child psychiatry in several of the member clinics of the association. The training is at a third-year, postgraduate level with minimum prerequisites of graduation from a Class A medical school, an approved general or rotating internship, and a two-year residency approved by the American Board of Psychiatry and Neurology. Stipends, derived mainly from the United States Public Health Service, are approximately $3,600, in line with that service's standards.

NEW JOURNAL APPEARS IN CRIMINAL FIELD

A new journal, the quarterly *Archives of Criminal Psychodynamics*, has published its first issue, "Winter 1955," under the editorship of Ben Karpman, M. D., of Washington, D. C. The journal, psychoanalytically oriented, includes original articles, translations, abstracts and book reviews. An unusual feature is a critical section of news items concerning criminal activities. The journal, described as a co-operative enterprise, has an editorial board of widely-known psychiatrists and psychologists who have been interested in criminal psychopathology.

MENTAL HEALTH MATERIAL MADE AVAILABLE

Mental health material currently available includes three moving picture films, *Hard Brought Up, Back to Life* and *A Family Affair,* for public mental hygiene education purposes. *Hard Brought Up* is the story of two juvenile delinquents and their rehabilitation. *Back to Life* illustrates the rehabilitation of an industrial worker after a mental breakdown. *A Family Affair* covers the problem of counseling; it will be used to recruit social work students. The first two films are produced by the Mental Health Materials Center, 1790 Broadway, New York 19, New York, and *A Family Affair* is sponsored by the Mental Health Film Board, Inc., an organization affiliated with the National Association for Mental Health and the National Institute of Mental Health of the United States Public Health Service.

The Academy-International of Medicine, Lawrence, Kan., has announced that a completely revised fourth edition of *Professional Films* is now being compiled. Authors of such films are asked to communicate with the Academy.

Current leaflets of the National Association for Mental Health include *For Good Mental Health in Your Community, Your No.* 1 *Health Problem —Are you Doing Anything About It?* and *Are You Living in a Haunted House?* The last is an adaptation of a pamphlet published and widely distributed by the New York State Department of Mental Hygiene.

The association notes that the Mental Health Fund campaign begins in April, and that the first week of May is Mental Health Week. The campaign continues through May.

o

NEW YORK STATE MAKES WIDE USE OF NEW DRUGS

Wide use in the New York State hospital system of the new drugs, thorazine and reserpine, has followed a meeting in Albany of 75 Department of Mental Hygiene psychiatrists who have been doing research with the new therapies in their own institutions. Tests conducted in 20 institutions under the direction of Assistant Commissioner of Mental Hygiene Henry Brill, M. D., are the most comprehensive studies ever undertaken in the New York State department's research program. Acting Commissioner Arthur W. Pense, M. D., making public the conclusions of the research workers, announced that wide use of the drugs would be undertaken in the future. Dr. Brill noted that about 70 per cent of properly selected patients showed significant improvement during the research program.

The reports cover the administration of thorazine to some 1,400 patients and of reserpine to about 700.

VENEZUELAN SOCIETY ELECTS OFFICERS

The Sociedad Venezolana de Psiquiatría y Neurología has asked this QUARTERLY to note the election of Dr. Estéban Ibanez Pétersen of Caracas as president for 1954-1955. Dr. Eduardo Quintero Muro is vice president.